P
Med
e

STORAGE

VOL. II. TORONTO, DECEMBER, 1921 No. 4

R. A. McIntosh

# THE
# CANADIAN VETERINARY RECORD

PROGRESS

IN HOC SIGNO VINCES

LIBRARY
AUG 20 1954
UNIVERSITY OF TORONTO

PUBLISHED QUARTERLY FOR THE PROFESSION
IN THE INTEREST OF VETERINARY SCIENCE

TORONTO **Ingram & Bell** CALGARY
LIMITED

Complete Supply House for all
Veterinary Supplies

**SPECIAL FORMULAS PREPARED**

A FULL LINE OF SURGICAL AND VETERINARY INSTRUMENTS

THE TOPLEY COMPANY

**OTTAWA**

***Canadian Representatives***

**Bausch & Lomb Optical Co.**
**Will Corporation**

**Rochester, N. Y.**

LABORATORY EQUIPMENT
MICROSCOPES

---

Dominion of Canada

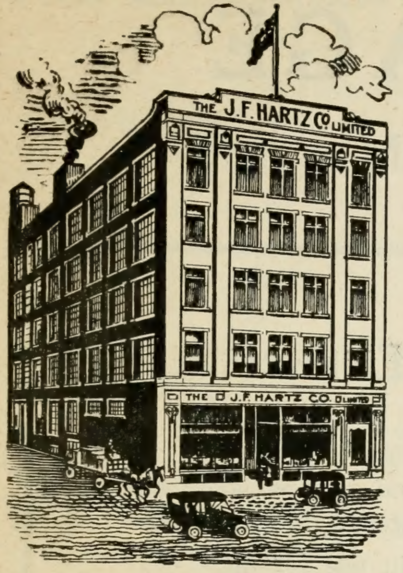
Department of Agriculture

The Health of Animals Branch employs a large number of veterinary surgeons as inspectors under the "Animal Contagious Diseases Act" and the "Meat and Canned Foods Act." The initial salary for the position of Veterinary Inspector is $1,800, and if services are satisfactory a yearly increase is granted until the maximum of $2,400 is attained. Further promotion may then take place to the positions of District Veterinary Inspector or of District Supervisor of Meat Inspection.

The attention of young men choosing a career is called to this field of work. Graduation from a recognized veterinary college is necessary for admission to the examinations of the Civil Service Commission. The examination for the position of Veterinary Inspector is held every spring, usually at the end of April, and appointments are subsequently made from the list of successful candidates in the order of merit.

Applications for permission to take this examination should be made to the Civil Service Commission, Ottawa.

THE J. F. HARTZ CO., Ltd.


THE J.F. HARTZ CO. LIMITED
THE J.F. HARTZ CO. LIMITED

VETERINARY INSTRUMENTS

LEATHER GOODS

VETERINARY BOOKS

BACTERINS AND SERUMS

***Our Illustrated Catalogue of Veterinary Instruments sent on request.***

The J. F. HARTZ CO., Limited
24-26 HAYTER STREET - - - TORONTO

---

Biological Products can be shipped into Canada from the United States Duty Free.

THE JENSEN-SALSBERY LABORATORIES
KANSAS CITY, MO.

**Make a complete line of Veterinary Biological Products**

and for the convenience of the Canadian Veterinarians carry a complete stock of these products with

MR. H. D. DAVISON
220 DUBLIN STREET - GUELPH, ONT., CAN.

Our products are distributed to Veterinarians only and on this basis we solicit your patronage.

# A PAGE

## FROM

100

## THE BOOK OF EXPERIENCE

NOT every-thing good is new, and not every-thing new is good. Many medicinals which have been in use for ages will undoubtedly remain standard for all time to come.

**Vaporal (Abbott)** consists of drugs of this type. It is an elegant combination of volatile aromatic respiratory antiseptics prepared for use by inhaling with hot water (steaming). It is not a secret formula but has been in use by a successful practitioner for years. Indicated in equine influenza, canine distemper, etc. A real wonder worker. In pint bottles at $2.10 net, each.

**THE ABBOTT LABORATORIES**
57 COLBORNE STREET
TORONTO - - - CANADA

# The Canadian Veterinary Record

*ADVISORY BOARD*

F. TORRANCE
G. HILTON
J. G. RUTHERFORD
D. WARNOCK
C. D. McGILVRAY
E. A. WATSON
W. J. R. FOWLER

*EXECUTIVE COUNCIL*

R. GWATKIN
L. M. HEATH
R. G. LAW
J. S. GLOVER

*EDITOR*

T. C. EVANS

*ASSOCIATE EDITORS*

J. B. STILL
D. S. TAMBLYN
KENNETH CHESTER
R. G. CHASMAR
A. A. ETIENNE
W. H. PETHICK
A. SAVAGE
REGINALD VICKERS
G. TOWNSEND
J. H. FRINK
D. A. IRVINE
L. A. WILLSON
W. B. PRICE
K. W. McKINNON
H. B. COLLET
C. H. WEAVER

Vol. II TORONTO, DECEMBER, 1921. No. 4

## CONTENTS

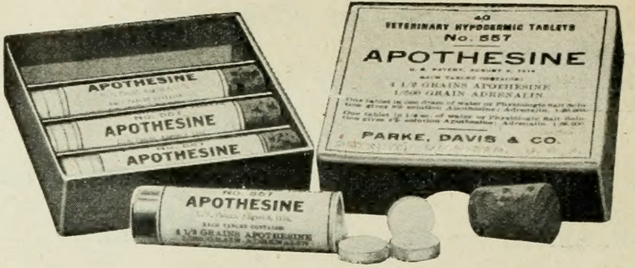
EDITORIAL ........................................................ 2

ARTICLES—

The Relation of Physiology to Stomach Diseases of Cattle ........................................ R. A. McIntosh 4
Parasitic Diseases of Foxes ........................ J. A. Allen 9
Caponizing Cockerels ........................ T. B. Lindsay 12
Contagious Abortion and Sterility in Cows ..... John Pringle 13
Biologic Preparation ........................ R. Gwatkin 17
Strangles, Influenza and Immunity .............. T. C. Evans 20
The "Compleat" Jockey 1688 .................. R. Gwatkin 22
Instructional Value of the Canadian Army Veterinary Corps ........................................ "Biscum" 25
The Common Clothes Moth .................. Arthur Gibson 29
Pure Milk and Veterinary Practitioner .......... J. S. Glover 31
Heat Prostration ........................ W. G. Thomson 42

MISCELLANEOUS—

Clinical and Case Reports ........................................ 34
Association News ........................................ 39
Veterinary Conference ........................................ 45
College Notes ........................................ 50
Correspondence ........................................ 53
Reviews ........................................ 54



# For Local Anesthesia

WHY take the chances of toxic effect with cocaine when it is now possible to produce local anesthesia with Apothesine without such effects?

Apothesine is a synthetic local anesthetic, suitable for use in any surgical procedure in which a local anesthetic is indicated, except for topical application to the mucous membrane.

Apothesine was subjected to a series of tests by experienced veterinarians for a period of eighteen months. This was done before the product was offered to the veterinary profession. Read what some of these co-workers say about Apothesine:

We have used Apothesine as a local anesthetic in 2% to 4% solution with Adrenalin on horses and dogs. In our opinion it is superior to cocaine, for it does not excite the patient and cause irritation or sloughing. Its effects are more lasting than those of cocaine. We have used nothing else this summer on operations of the legs, especially quittors, and have discontinued the use of cocaine.—Dr. E., Montreal.

Well pleased with Apothesine. It works in every way as efficiently as cocaine.—Dr. W., New York.

Used it on three dogs in scaling tartar from the teeth. Was very much pleased with results. Believe it a wonderful drug.—Dr. E., New York.

Dr. K., New York, reports excision of a large granulous growth on coronary band, using a 3½% solution of Apothesine. He made a deep incision, but the horse did not flinch. The wound healed with no sign of sloughing, and the doctor is delighted with the results.

Very satisfactory results; no side actions; most of the operations were amputation of the tail or removal of tumors from dogs. I used the strength recommended, about 2% solution; in some cases 1% solution.—Dr. M., New York.

Apothesine is supplied as hypodermic tablets (V. H. T. No. 557), ten to a tube. Each tablet contains Apothesine 4½ grains and Adrenalin 1/500 grain.

**Parke, Davis & Company**

# The Canadian Veterinary Conference

*Photo by C. H. Weaver*

THE
Canadian Veterinary Record

PUBLISHED QUARTERLY FOR THE PROFESSION IN THE INTEREST OF VETERINARY SCIENCE

Vol. II. TORONTO, DECEMBER, 1921. No. 4.

# Editorial

Owing to lack of sufficient space, a number of valuable articles have been withheld from this issue of the Record. Articles are accepted for publication and forwarded to the publisher as they are received and the editor requests those gentlemen who have taken the time and gone to the trouble and expense of preparing contributions will accept this explanation should any article they are interested in be absent from this number.

## RECORD COMPLETES ITS SECOND YEAR

The present issue completes the second volume of the Canadian Veterinary Record.

During the year 1921, four editions have been published and copies of each mailed to every veterinary surgeon in Canada whose name and address is known. Added to these, copies have been sent to many well known members of the profession living in Great Britain, New Zealand, United States and France, as well as Libraries, State Colleges and Research Laboratories in the United States. It is thought that the Record has, in the youth of its career, awakened a good response and accomplished in a small way the objects responsible for its conception, viz: the establishment of a close friendship between different Veterinary Associations and their Members, throughout Canada, in the encouragement of the publication of scientific articles, case and clinical reports, abstracts and reviews of new books peculiar to the profession, as well as detailed accounts of the various meetings of Canadian Veterinary Associations. In its endeavours the Record is indebted to the Secretaries of the Associations represented, who have, without exception supported and encouraged the effort.

In closing Volume No. 2, we embrace the present opportunity of wishing our readers a Very Happy Christmas and Prosperous New Year.

## CANCELLATION OF THE ROYAL WINTER FAIR

By the cancellation of the Royal Winter Fair for this year pure bred live stock of the Dominion have received a serious set back. The event had been widely advertised, and entries from all parts of Canada and United States had poured in. Breeders who spent time and money in fitting animals for the occasion cannot but feel somewhat badly used at the show being called off at the last hour. The action taken by the committee may injure the future success of the Royal Fair.

There seems to be a great diversity of opinion as to the real reason for cancelling the show. The reason advanced was lack of suitable heating arrangements, but the Toronto City Council state definitely that a satisfactory heating system could be installed in time for the opening.

Many live stock breeders are of the opinion that it should have been discovered that the building would not be in fit shape for exhibits and spectators earlier, and not left until three weeks before the date fixed for the opening ceremonies.

## THE ABOLITION OF THE THOROUGHBRED

A very sinister effort is now in operation in the United States to abolish horse racing. The Sims-Sterling Bill has passed the House of Representatives in Washington and will shortly appear before the Senate. This Bill while not attacking racing openly, would prohibit news of racing from being sent by telegraph or transmitted through the Postal Mailing Service.

There is a strong chance of this Bill being passed by the Senate in the event of which it will become law in the United States.

Should this happen we may rest assured that the "anti-everything" element in this country will make a renewed effort to suppress horse racing in Canada.

It is to be sincerely hoped that before Canada is stampeded into passing any form of legislation, which would ultimately tend to make the thoroughbred horse extinct, that the question shall first receive very careful consideration by the Live Stock Breeders. The product of the thoroughbred represents years of careful study and selection. If horse racing is prohibited the quality of the breed will deteriorate, because no government would, or for that matter could, subsidize the high priced sires of these horses. It is doubtful too just what success such a movement would have, because, the Canadian people, in spite of the present fierce delight in gasolene propelled transportation, are a horse loving nation. The traditions of our fathers came by the use of horses.

Let it not be thought for a moment that energies of prohibitionists have subsided with the suppression of the legitimate sale of alchoholic liquors, because already whimperings are heard amid the arid environment of prohibition leaders, that "the race horse will be the next to go."

The thoroughbred horse is the foundation of the finest of our light breeds of horses and tradition demands that he shall be spared. It is therefore imperative that we as horsemen should do everything within our power to combat any subtle effort to reduce the high breeding and valuable characteristics of this breed of horses.

# The Relation Of Physiology To Stomach Disturbances In Cattle

**R. A. McIntosh, Oakville, Ontario.**

In presenting this article for publication the writer does not wish to convey the impression that anything new in the way of treatment is being advanced; but rather to show that the successful handling of such cases is brought about by agents which restore the function of the organ involved and combat the existing etiological factor or vice versa as the indications for treatment may be, and furthermore it will be confined chiefly to the consideration of medical agents.

Nature has provided the bovine species with a complex gastric apparatus and it cannot be truly said the physiology of the various compartments and the method by which they co-operate with each other in the performance of their function is clearly understood. When the digestive tract of cattle is considered it is found that it has several capabilities and chief amongst these that it can digest and assimilate much more food products than is required for body sustenance as is evidenced in the wonderful milk and butter fat producers of the species in the dairy type, and the great meat producers of the beef type. Their digestive tract is capable of handling more roughage and also a greater variety of food both as to its nature and chemical composition, then is that of some of the other domesticated animals. Furthermore it has great storage capacity which is one of the chief functons of the rumen. The latter fact goes to show that in all probability at some time in the evolution of cattle kind they were animals which only had opportunities to eat at certain indefinite periods, and as a consequence developed an organ which acted as a reservoir to provide sustenance for them until such times as they came in contact with food again.

The rumen is an extremely large organ occupying three-quarters of the abdominal cavity and having a capacity of from thirty to fifty gallons. It is a receptacle for the sojourn of food and also through its vermicular movement, churns the ingesta while it is undergoing maceration and fermentation in the presence of the swallowed saliva. There again it must act in unison with the other organs during rumination.

In impaction of the rumen there occurs an abnormal accumulation of food which as a rule, is of a nature that does not readily undergo fermentation and is invariably associated with an atonic condition of the musculature of the bowel. The fact that the rumen is a reservoir for the purpose of holding food, leads to the belief that many of the so-called impactions are not essentially impactions at all, but rather an atonic condition of the bowel, which contention is further substantiated by the rapid recovery of cases of this nature upon the administration of a combination of stimulants and carminatives as nux vomica, ammonium carbonate and zingiberis. Evidence is not wanting where cases have begun to ruminate shortly after the administration of such as the above mentioned agents which would not have occurred in the true impaction. In enlarging on this point it is simply for the purpose of showing that stimulants are primarily indicated rather than large doses of saline cathartics which do not and cannot have any marked influence over the vermicular movement of the rumen (only in a secondary way) by reason of the fact that their action is chiefly exhibited in the true stomach and intestinal tract.

What then are the essential elements of treatment in impactions and atonic conditions of the rumen. First, stimulants, and included in this list are nux vomica, ammonia compounds, zingiberis, barium chloride, tartar emetic, and possibly pilocarpine and eserine. Second, purgatives, and under this heading the salines, gamboge, aloes and cascara may be used. Third, intestinal antiseptics are indicated to prevent fecal toxemia which in stubborn cases may have much influence over the ultimate outcome of the case. For this purpose such agents as salol, the other salicylates, sodi hyposulphite, creolin and formalin are useful.

It will be noticed that under the head of stimulants are placed agents, which in the materia medica are classed as carminatives and purgatives, the reason being that it is not so much for their carminative or purgative action they are valuable, but rather because they tend to restore the function of the organ through their stimulative effect. Physiologically the rumen has much to do with rumination and at the time when the bolus of food is thrown back for remastication it is active. Zingiberis stimulates the action of regurgitation and in using this drug it will be found that the fluid extract is more active than is the powder. What is true of ginger in this respect is also obtained in the action of tartar emetic It likewise stimulates the act of regurgitation on account of its emetic action. In regard to barium chloride its action is exhibited on the smooth muscle of the bowel wall and being an active stimulant of peristalsis is indicated for that purpose in atonic conditions. The value of nux vomica and the ammonium preparations is well known and they serve a dual purpose in that they support the patient through their systemic effect as well as having a favorable influence over the vermicular movements of the abdominal viscera.

It is through the use of the above agents or those similar in character that the rumen is relieved of an impaction, rather than by the medium of some medicant that produces liquid evacuation and hyper-catharsis.

The indications for the use of the saline cathartics or others similar, lies chiefly in the fact that they sweep out the lower bowels thus preventing a fecal toxemia and also in producing liquid evacuation they cause the patient to drink, which materially assists in overcoming the condition.

The use of intestinal antiseptics is practically always indicated in any condition where a fecal stasis is in evidence to prevent too rapid a multiplication of the resident bacteria, the deleterious effect of which may be much greater than we are aware of.

Turning to the condition of acute tympanites, gaseous indigestion, or what is commonly known as bloating, it it found that two forms exist. One in which the gas exists in a free state, for the most part, and the other in which the gas is intermingled with the rumen content and the whole mass of ingesta is in a seething and actively fermenting process. The latter form is more difficult to overcome especially if there is any danger of asphyxia through diaphragmatic pressure since tapping will not give the immediate relief that it does in the former, and as a matter of fact in occasional cases, the rumen is so engorged, the condition so acute, the fermentative changes so active that nothing short of a rumenotomy incision allowing the contents to spill out as quickly as possible will save the life of the patient.

In the handling of these cases the principles of treatment will differ somewhat from that of impaction since there exists an extremely active etiological factor which should be combated and at least partially overcome before stimulation of the physiological activity of the organs involved takes place.

The essential elements of treatment should come in the following order and under these heads: First, antiferments, and second, stimulants and carminatives to restore tone to the bowel wall and expel gases; third, cathartics to rid the alimentary tact of the offending material.

The fermentative process should receive first consideration, for it is the underlying cause of the associated conditions, namely, the inert musculature of the bowel which has become paralyzed through so great a distension and pressure and such agents as formalin largely diluted, creolin, salicylic acid, turpentine, ammonium carbonate, strong sodium chloride solutions. sodium bi-carbonate, napthol, are active in controlling the condition and neutralizing the gases which•are being produced.

With the active process under control, stimulation is in order, and those mentioned in impaction are also indicated here: Nux vomica, ginger, capsicum, barium chloride, tartar emetic, the hypodermic cathartics, eserine and arecoline.

In some cases this is all that is necessary, but in others where the rumen has been so engorged with succulent and fermentative food the use of salines to produce catharsis is indicated to assist in its removal and to carry off the fecal matter accumulated in the intestines during the interruption of their functional activity.

The omasum or the third gastric compartment is occasionally the seat of a digestive disturbance in which its contents become dried and hardened. The term impaction of the omasum, seems almost erroneous for it is not an organ which provides for the accumulation of any appreciable amount of ingesta as is the rumen or the equine colon in which typical impactions occur. It is true that on post mortem cases are met with, in which the food between the leaves is hardened and devoid of moisture, but there is no abnormal amount, so that it really does not constitute an impaction.

The physiological functions of this organ are in need of further investigation. Its elaborate design as well as the unpreparedness of its content for entrance into the true digestive apparatus indicate to a certain extent its function. In examining the organ the leaves are found to be studded with papillae, which at first are longer, coarser and sharper than those which are found on passing over to the other extremity of the leaf at the abomasal aperture. The arrangement of the leaves and the nature of the papillae suggest that is chiefly a medium which serves to way-lay coarser particles of ingesta and further prepare it for digestion by a form of a milling process. The fact that this organ receives its nerve supply from a source independent of that of the rumen and reticulum would indicate that its activity is brought about by a stimulus different in character to that which influences the other two. It is reasonable to assume that it is the most active at those periods of time in which rumination occurs, for it is on this occasion that the bulk of the food passes into the true stomach and intestines for digestion and assimilation. If then the act of rumination serves as a stimulus for this organ it follows that almost any condition which interfered with rumination would lead to more or less torpidity of the viscera in question with a drying up of its content. In view of the facts that it is possible for liquids and finer particles of food to pass through the organ without becoming interposed between the leaves, that its function is one of food preparation, and also that no alimentary absorption from it occurs, it would seem logical to assume that disturbances occurring in the omasum are chiefly of a secondary nature.

Whatever the cause, if for any reason it is believed that the omasum is involved in disease, the therapeutics as far as is possible, should be based upon the knowledge possessed of its physiology. As in some of the other forms of disease in the alimentary tract where the ingesta has become dried and hardened the principles of treatment would be, stimulants, purgatives and intestinal antiseptics.

As a stimulant nux vomica is preferable, due to the fact that stimulation of the spinal cord excites action in this organ. Ammonium compounds are also indicated, carminatives and agents which stimulate the return of rumination. The use of the active hypodermic cathartics is not as well indicated here as in some of the other conditions for relieving the organ of its dried content is of necessity a more or less gradual process.

For the purpose of purgation the oleagenous agents will penetrate the dried food lying between the leaves more slowly but at the same time more completely than will aqueous solutions of other forms of cathartics, oleum ricini, oleum lini, liquid petroleum. Castor oil seems to be the most effective, administered warm with a liberal amount of molasses in pint doses. It must be remembered that the leaves of this organ in performing their function in carrying the food up between them for trituration defy the laws of gravity for they are suspended from its superior surface internally and the aliment enters the organ inferiorly. It follows then that liquids would tend to gravitate without contracting the leaves to any great extent but of the two the oils penetrate and lubricate more thoroughly. Intestinal antiseptics are also indicated.

In those cases where nervous symptoms present themselves they will have to be combated in accordance with the form they assume, for in some there is exitement, in others vertigo, and again in others coma. These latter cases may be dangerous to attempt drenching and the rectal administration of the following, glauber salts, 1 ℔, disolved in a quart of water to which is added two ounces turpentine and four ounces of glycerine, will sometimes serve to arouse persistalsis in the intestinal tract. The enema should be injected as deeply in the bowel as possible, endeavouring to have it retained a sufficient length of time to become absorbed. If successful in having it retained, it is remarkable the results sometimes manifested from this procedure in any form of digestive disturbance in which fecal stasis is evident in the lower bowels. In these cases it is not desirable to attain a marked catharsis, but rather to produce a laxative effect over a considerable period of time with continuous stimulation.

Traumatic indigestion is another condition not infrequently occurring in the bovines and is brought about by the ingestion of a sharp-pointed foreign body which later penetrates the reticulum or rumen giving rise to a digestive disturbance difficult to diagnose positively, but sometimes is followed by a train of symptoms which enable the examiner through a process of exclusion to be reasonably certain that such an accident has occurred.

The successful handling of such cases is beset with difficulties almost insurmountable, but a description of the symptoms may be of value in this article in order to differentiate it from other conditions related.

A sudden and unaccountable gastric disorder, evidence of abdominal pain which is intensified on movement of the patient, movements if any are stiffly and carefully performed, these patients tend to adopt the standing position, may attempt to lie down but on account of the pain will not finish the act. In quieter periods have a dull expression; but are wildly anxious where pain is acute. The pose of the animal during defecation and urination is imperfect and the acts are often delayed and incompletely performed, with constipation resulting. Rumination is impaired and peristalsis of the entire abdominal viscera is in abeyance. The appetite is suppressed and if food is taken tends to increase the pain. Manipulation of the abdominal wall posterior to the ensiform cartilage in some cases reveals pain. In some peritonitis is marked and the abdomen is tucked up and held in a fixed position. In some the foreign body may be prevented passing completely through the visceral wall and become encapsulated in fibrous tissue and as time goes on a gradual improvement is evidenced. In others the foreign body passes on through the diaphragm and into the pericardium, later on producing the well known traumatic pericarditis.

The treatment of these cases is not satisfactory. Obviously, if a positive diagnosis could be made a rumenotomy incision with an exploration of the reticulum in an attempt to locate and remove the foreign body would be indicated. Other simpler measures consist of standing the patient in a stall with the anterior extremity elevated a foot higher than the posterior which may assist in causing the foreign body to fall back into the viscera. Others recommend placing the patients on their backs with the anterior extremity of the body raised, and then kneading the abdomen with the foot just back of the ensiform cartilage, to cause a return of the foreign body. These patients should be fed sparingly with liquid food, bran mashes, and given occasional doses of linseed oil, lime water, and carminatives to assist and promote digestion.

In concluding this article it might be fitting to point out that drugs which have a carminative and emetic effect are especially valuable in the successful treatment of digestive disturbances occurring in the fore stomachs. To make administration easier and safer it is a good procedure to sweeten drenches with molasses and other syrup. Finally to intelligently and successfully handle these cases certain principles of treatment are involved which we should have a knowledge of and which serve as guides in our choice of remedial agents.

## GREAT STRENGTH IN TINY BODIES

### L. E. Eubanks

Probably the most wonderful feature of a mosquito is its muscularity. This may seem a ludicrous statement, but a great surprise awaits anyone who for the first time examines one of these insects under a glass. Size for size, a mosquito's wing muscles are equal to an eagle's. Even on a calm day, a mosquito can fly forty or fifty miles without a halt; and with a helping wind, three times this distance! The ordinary housefly, too, has astonishing wing strength; tests have shown that when it desires really to hurry it can "dash" 160 feet in a second—110 miles an hour straight-away.

Imagine a man who could lift 73,800 pounds! He would have all known "strong men" of past and present beaten so far that comparisons would be ridiculous. But that is what our average man could lift were he as strong in proportion to his size as a crab; a weight 490 times its own is just a good average lift for a crab! The muscles of a large oyster, too, will support a weight of thirty-seven pounds.

A Belgian scientist found that a bee, weight for weight, was thirty times as strong as a horse. It has been found that an ordinary house-fly can lift a matchstick, and that in doing so it exerts as much power in proportion to its size as a man when he holds aloft on his feet a beam fourteen feet long by thirty inches square. Even a very small bug can drag six matches —the equivalent to a man's pulling 330 beams as large as himself.

Spiders sometimes exhibit wonderful strength, especially in conflict. There is a spider in Java that is the dread of all other insects; it makes a web than can hardly be cut with a knife! With spiders size is not always a measure of strength; but this fellow has both bulk and power.

One writer states that an ordinary ant can carry ten times its own weight. Personally, I have seen them do far more than this.

---

Drs. C. T. Tamlin, of London, Ont., W. F. Clark, of Goderich, Ontario, J. Sinclair, of Cannington, Ont., and Lieut. Col. J. Wilson, of London, Ontario, called at the Editorial Rooms of the Canadian Veterinary Record whilst in Toronto attending a meeting of Ontario Veterinary Stallion Inspectors, on October 10th.

---

Dr. A. E. Moore, late Chief Travelling Inspector, Health of Animals Branch, Department of Agriculture, Ottwa, is now stationed at Montreal looking after the work in the Province of Quebec, also the Maritime Provinces.

# Another Field For The Veterinarian (Continued)

## PARASITIC DISEASES OF FOXES IN CAPTIVITY

**J. A. Allen, Animal Pathologist, Fox Research Station, Health of Animals Branch, P. E. I.**

The problem of disease has naturally a direct bearing on the general problem of sanitation. Because of unsanitary methods, a large percentage of young foxes become heavily infested with intestinal parasites. Round worms have been found in foxes only two weeks old; and since the young do not come out of the kennel until about the fourth week it follows that the chief source of infestation is in these dens. Either the worm eggs are widely disseminated over the dens or else the parents are themselves infested.

The treatment of pups for worms is now universally practiced when they reach the age of three or four weeks. The medication of fox pups at such a tender age is naturally attended with danger, and many of them do not withstand treatment. If more strict attention were given to the cleanliness of the kennels throughout the year, and the parents treated for intestinal parasites before mating, the young would not be so apt to become infested and treatment could be delayed until weaning time. It has been difficult to get ranchers to understand that worms do not arise spontaneously, but result from the ingestion of worm eggs; and the worms and their eggs are often allowed to remain in the dens. This means, of course, that the animals soon become reinfested. Too many fox farmers regard parasitic infestation as a necessary evil.

In a recent communication offered to the "Journal of Parasitology", the internal and external parasites found in Canadian foxes were listed! It is not the purpose of these articles to describe minutely the economic importance of all the parasitic and other diseases observed in foxes. This could not be done in one or two readable articles. Attention will be given only to the more important conditions encountered.

**Mange. Sarcoptes scabiei** (Furstenburg 1861) Raill. As in other species this parasite attacks the body of the host, and produces typical skin lesions. Fortunately, this disease is very rarely found in the domesticated fox. Since the fox owes its intrinsic value to its fur, it follows that mange would be a disastrous disease.

Only a couple of limited outbreaks of mange have so far been observed in Canadian ranched foxes. In these outbreaks no attempt was made at treatment. The affected animals were immediately slaughtered; both carcases and pelts burned and the premises thoroughly disinfected. Up to the present we have not heard of any reoccurrence of the disease on the ranches involved.

**Ear Mange.** This condition is the result of infection by a parasite known as **Otodectes cynotis** (Hering 1838). This parasite does not bore into the skin and it may be present in the external ear of a large number of foxes without their showing any external manifestations of the disease. Occasionally, however, the mite penetrates the middle ear and causes an otitis that is difficult to heal. Bacteria are carried in with the parasites and intense suppurative inflammation results. Frequently this inflamation extends to the brain causing meningitis. If the animal recovers the head is held to one side.

**Prophylaxis:** Since this parasite is very rampant, foxes should be examined at intervals to determine the presence of the mite. A simple solution of 1 per cent. Creolin in Gycerine is a very effective way of killing the mites. Attention should be given to the houses or pens, because if the houses are infested there is not much use in treating the animals because they become very readily re-infested. When the parasites penetrate the middle ear causing suppurative inflammation there, autogenous vaccine prepared from the organisms found in the discharge have given excellent results. While the suppuration may clear up there is always a permanent effect of hearing and the head very frequently remains twisted.

**Fleas: Ctenocephalus canis** (Curtis 1826). In the absence of proper surveillance nearly all foxes in confinement become infested with fleas, and because of the irritation and annoyance which they occasion, a heavily infested fox cannot be expected to thrive or produce fur of good texture. This problem is largely being overcome by strict sanitary measures and external treatment with either spirits of camphor or dipping in 1 per cent. solution of Creolin. In addition to this treatment it is very important that the fox house be thoroughly cleansed. Since fleas pass the immature stages of their life history in dirt, it is essential that all filth be constantly removed to prevent the larval forms from maturing and getting on the host. If this is not done it is useless to attempt any form of treatment because the parasite will get on the host almost as quickly as they are removed by insecticides.

**Ascarids:** Three varieties of ascarids have been found by us in Canadian foxes, **Belascaris cati** (Schrank 1788) **Belascaris marginata** (Rudolphi 1802) and **Toxascaris limbata** (Railliet and Henry 1911.)

Because of the sanitary problem previously considered, young foxes are often born in a dirty environment. Nearly all fox pups are exposed to ascarid infestation. We have found them in fox pups only a week old, and in pups three or four weeks old it is quite common to find the intestinal canal from stomach to colon completely packed with ascarids. In several cases we have noticed that the larval forms had passed through the bile duct, and adult worms were found in the liver. Such cases have always been fatal.

The only method of preventing ascarid infestations is strict sanitary precautions and the treatment of the adult foxes before they are mated. The successful treatment of adult animals is not a difficult matter, since they are seldom found to harbour more than one or two worms.

There are a number of commercial remedies on the market designed for the treatment of round worms of foxes, and fox ranchers have had to resort to them in the absence of professional advice. It must be remembered that the treatment of fox pups is a delicate task, especially when only three or four weeks old; and the substance employed must not be very potent. The writer has had very favourable results by the use of the following formulae:

Rx. Ol. Chenopodii M. 1.
Ol. Ricini M. 5.

Adult foxes have been given Chenopodium on the basis of 0.2 mil per kilo of body weight with excellent results. In our experience Santonin is not only an unsafe drug but also gives indifferent results in expelling ascarids from foxes.

**Hookworm Disease: Uncinaria polaris (Looss 1911.)** This is the most important parasitic disease with which the rancher has to contend. Our data as to the prevalence of hookworms in foxes is not yet complete, but a large percentage of the many fecal samples recently submitted to this laboratory was found to harbor hookworm eggs.

In another contribution the writer has discussed in detail the economic importance of hookworm infestation and this is merely synopsised here. As in all species parasitised by uncinaria, there is usually a general unthrifty condition, though this depends chiefly upon the number of worms present. Hookworm eggs have been observed in prime foxes. When many worms are present, the fur becomes dry and glossless and is not acceptable to the fur market. This makes a very important problem for the fox farmer.

When the manner in which foxes live is taken into consideration, one readily sees the magnitude of the problem of hookworm eradiction. From two to seven animals are housed together over long periods, and if one infested fox, continually voiding eggs, finds its way into the herd, the remaining animals very soon become involved.

The problem is largely one of sanitation, and it can best be controlled by the religious application of sanitary measures. . Ordinary coal-tar preparations seem to be unsuitable in preventing the spread of hookworms. In recent experiments we have found that it is necessary to thoroughly cover the ground with lime, and spray with a three per cent. solution of chlorine (chloride of lime). The houses must be frequently scorched with a torch, and kept clean by scrubbing and disinfection.

It is very necessary to find an efficient remedy for the removal of the parasites before eradiction methods are complete. In experiments conducted at the Fox Research Station last year, it was found that chloroform, though efficacious in dogs, was inefficient as an anthelmintic against hookworms in foxes, and also dangerous, since it killed fifty per cent. of our experimental animals. Thymol used on the basis of 0.065 grain per kilo of live weight gave better results and the mortality was reduced to 6.8 per cent.

Maurice C. Hall has recently reported his work on the use of Carbon Tetrachlorid in the removal of hookworms in dogs, and promising results are shown. We have used this drug in a comparatively few cases with apparent good results, but work is now under way at this station with the view of obtaining accurate experimental data as to the efficiency of the drug in hookworm disease in foxes.

**Worms Of Respiratory System:. . Eucoleus aerophilum.** This parasite may be found in the larynx, trachea, and large bronchi, and often produces a chronic catarrhal condition that simulates distemper. The parasite is found in these locations lying in symmetrical coils. It is very slender and about the same color as the back ground and is therefore difficult to see. The eggs, which are lemon shaped, are found constantly in the trachea, oesophagus, and foeces.

So far no satisfactory treatment has been devised for the removal of this parasite.

**Literature Cited.**

(1) A preliminary note on parasites infesting domesticated silver black foxes in Canada.—J. A. Allen and A. B. Wickware. Submitted to Parasitology October, 1921.

(2) Allen, J. A. The efficiency of Chloroform and Thymol against Hookworms in the Silver Black Fox. Journal. Amer. Vet. Med. Ass'n. April, 1921.

(3) Hall, Maurice C. Carbon Tetrachlorid for the removal of Parasitic Worms, especially hookworms. Journal Agr. Research. Vol. 21. No. 2. April, 1921.

**Acknowledgements.**

My thanks are due to Dr. F. Torrance, Veterinary Director General and Dr. A. E. Watson, Chief Animal Pathologist, for permission to publish this series of articles on Black Foxes.

---

We are pleased to announce that at a meeting of the Fellows of the Central Veterinary Society, 10 Red Lion Square, London, England, on April 7th, 1921. Dr. C. D. McGilvray was elected by them an Honorary Fellow of the Central Veterinary Society as a mark of their appreciation of his achievements in the advancement of Science.

# Caponizing Cockerels

**T. B. Lindsay, Halifax, N. S.**

Of the many and varied operations with which I assisted Dr. Dunn, my preceptor, during the past summer, the one which I will relate here is that of caponizing cockerels. The operation is performed in order to increase the quantity and quality of the meat, the same as in any other animal; also. a capon will hover a brood of little incubator chicks better than most mother hens.

We were called on not only to caponize the birds but to give our client a few lessons so that she might carry on the profitable procedure herself. (I may mention that our client was a young lady who is quite interested in the poultry business and owner of a large flock of White Wyandottes.

The cockerels were about ten weeks old, weighing from one and one-half pounds to two pounds.. We had notified the owner to fast them for thirty-six hours preceding the operation.

Our equipment consisted of a barrel, two weights with a cord attached to each, a small scalpel, spreader, testicle remover, tearing hook and a basin of antiseptic solution.

The cockerels were corralled in a wire pen nearby and the gardener was bringing them forth, one at a time.

They were laid upon the barrel, one weight being tied to the legs and allowed to hang down the side of the barrel; the other weight being tied close up on both wings and allowed to hang down on the opposite side of the barrel. The bird is now secure and the seat of the operation is in full view. A few feathers are plucked just in front of the hip joint. A bold incision is made between the last two ribs, keeping close to the anterior border of the last rib, from the vertebrae downwards, about one inch in length, cutting through the abdominal wall to the peritoneum. The spreader is now inserted and the wound is opened sufficiently to admit the remover. A small hole is made through the peritoneum and the upper testicle, which is a small yellowish object about the size of a grain of wheat comes into view, lying to one side of the vertebral column, with the posterior aorta and vena cava just back of it. Care must be taken not to sever these blood vessels or the bird is a dead one. The remover is now inserted over the testicle and applied to the spermatic cord. The instrument is twisted around several times until the cord becomes loose and the testicle is removed.

The bird is turned over and the operation is repeated, proceeding as before.

No anaesthetic is used as the cockerel does not show least sign of pain. The capon is now allowed on his feet none the worse from the ordeal. The wounds are not sutured owing to the quickness with which they heal, as healing usually takes place by first intention.

After the first two or three capons were finished, the Doctor's technic and speed began to show and we had the gardener bringing them hither on the double, until finally we did thirteen. Evidently the Doctor is not superstitious or he would have done a few more.

Our client, who was observing our proceedings all the while, with a few words of instructions commenced on Number 14. She carried on with remarkable skill and from the latest report I hear that she is a real expert at caponizing. I presume the old gardener is kept quite busy catching cockerels.

# Contagious Abortion And Sterility In Cows

**John Pringle, Toronto, Ontario.**

(Continued from September)

In many herds of pure bred cows there occurs from year to year, cases of sterility or in other words an occasional case of a cow refusing to breed. The so-called disease contagious abortion as caused by the Bacillus abortus Bang, is of course the great cause of sterility amongst the lower animals, especially cows. The bacillus itself not being the direct cause of the condition but its presence in the system or genital passages of the female, weakens the resistance to the invasion of pyogenic and possibly other organisms, which may be termed secondary invaders, and which are the direct cause of sterility.

There are quite a number of causes for, let us say, sporadic sterility, a few of which I will mention, first, anatomical deformities, e.g., constrictions of vagina, imperforate hymen or imperfect hymen, the non-removal "as should take place before birth," atresia of the os uteri, very rare, obesity, debility, etc. One cause that is of great importance and should be carefully considered by all owners of dairy animals is the milking tests. It is quite permissable to put a cow under a test for a whole period of lactation, provided she is not forced by feeding an excess of certain foods to increase milk production. This will not harm provided she is bred at the right time, say from two to three months after parturition, but to put a cow under a seven day or a thirty day test, feed her all the rich albuminous foods she can consume, and milk her three or four times each day is dangerous. I have no statistics but would ask how many cows have made great records under such tests and have never been heard of again, either by making a second record or by producing progeny that have made records? Such tests are ruinous to many good cows. I recently saw a cow that had made a record for the quantity of milk given. She was under a seven-day test and pushed to the limit. She had lost 50 lbs. in weight, was dull and sleepy, with no desire to eat or stand up. When on her feet she was scarcely able to stand, as the muscles of her legs were so weak that they trembled and twitched when any strain was put upon them. Probably this cow, an exceptionally good one, is ruined, lost to posterity for ever. Are such tests worth the cost? I am of the opinion that they are not, and further that it is cruel practice and should not be allowed Other causes for Sporadic Sterility is not breeding cows at the proper time; viz: not breeding for five to seven months after parturition. Improper feeding, giving an unbalanced ration especially rich albuminous foods, the proteids being in considerable excess to the body requirements, retention of the afterbirth, especially if improperly treated, and its sequels. Close, unsanitary stables, exposure to cold and wet, etc. There are many other causes, both predisposing and actual, some known and some unknown.

Sterility of cows is a serious question at the present time, and concerning which little is known by stock owners. It is an unfortunate fact that sterility resembles tuberculosis and many other diseases in this way that the longer an animal is sterile the worse she is to cure and the longer time it requires to affect a cure. For instance a farmer has a valuable cow, she does not conceive, comes into oestrum time after time, and is bred regularly at each oestral period. This goes on for months, in many cases for as long a period as twelve months, then he sells her for beef. Had she been treated early she would have conceived and her progeny been saved to posterity for ever. Take an average pure-bred cow, worth say $300 to $500, her calf being worth $100 to $150 at birth. If sterile, what is her value? Anywhere from zero to $30, while if a breeder, she is worth $450 to $750. The same may be said of cows, value up to $3000. A few of these cows may be incurable but the great majority are certainly curable, especially if treated early. The difference between say $40 and $450 is surely worth the fee of an expert to treat that animal, even if he charged $100 for his services, and further it is not just the one calf that the owner would get, but the cow, unless too old, would continue to breed all her natural life and the progeny retained forever to increase the wealth of the country.

In herds where contagious abortion is present, the number of sterile cows is greatly increased. I have experience of herds, where the number of sterility cases exceeded 20% of the whole and from 1% to 4% remained incurable.

**First Examination of a Sterile Cow.**

The first essential requirement is patience, no case can be examined and treated in a hurry. One case may requre twenty minutes, the next one and a half hours. Occasionally a case can not be efficiently treated on the day of first attempt. Rough handling or hurried work may easily ruin a good cow, and will always be attended with disastrous results. Even a good natured, quiet cow may be made an inveterate kicker. The first duty is to get a complete history of the whole herd and the individual cow. Does contagious abortion exist? If so, find the cause? Age of cow, results of previous breeding, whole history, history of last pregnancy and parturition. Was it a case of normal or premature birth? dystokia? was afterbirth discharged at right time or was it retained? Was cow sick in consequence? Had cow metritis or was afterbirth putrid and uterus infected, very important"? Since then does cow come into oestrum regularly, or is she continuously in oestrum, or does she show no oestral periods, etc. etc.?

**Methods of Examination.**

Have two pails of hot water with a little disinfectant added. A large cake of soap, towels, etc. One pail is for instruments and one for washing. Then place cow in a narrow stall and tie up short. Wash external genitals, anus and tail thoroughly, then insert fingers into anus a few times and make the cow defecate by dilating the sphincter ani. After thoroughly washing and disinfecting the parts introduce hand into rectum, remove any foeces which may still be there, palpate cervix of uterus and ovaries per rectum. Should the rectum contract stop operations and let go of uterus or ovaries, whichever you are examining at the time until the peristaltic movement has passed. The rectal examination consists of palpating the vagina, cervix, uterus, oviducts, broad ligament, ovaries and ovarian ligament and the fimbriated extremity of the fallopian tubes or canopy.

It is, I think, the better plan to examine per rectum first as it is thereby completely emptied and one is less likely to get arms or instruments dirtied later by foeces when examining or treating case per vagina. The operator must have his nails very short to avoid lacerating mucous membrane of rectum or vagina. I would state here that I do not think one can make an absolutely sure diagnosis of cervical and uterine diseases per rectum on a first examination. Therefore, the next part of the examination is made per vagina. Before doing this, it is necessary to again thoroughly wash the external parts, viz: anus and vulva, also hands and arms, inserting the hand into the vulva is the only painful part of the examination, especially in heifers that are tight. In some cases it is too cruel to do the complete dilatation of the vulva at one time. I have found a few drops of carbolized olive oil rubbed over the lips of the vulva very useful in facilitating the introduction of the hand. I have found this better than white soap, as the latter does not dilute or alter the character of the vaginal secretions. A full or partially full bladder interferes considerably with the making of a careful examination.

**Examination and What to Examine For.**

After introducing hand into rectum, turn it palm downwards, palpate the vagina, and in pushing it forwards grasp the cervix, enlargement of which can be detected, then grasp the uterus, which should be round, firm, yet compressible. The horns ought to have the same feeling, but are smaller. In cows that that have had a number of calves, one horn will be larger than the other; this is usually found to be the right horn, but the difference is not great. The cervix and body of uterus in non-pregnant cows is found in the pelvis, the horns projecting over the brim of the pubis. In a few cases, especially heifers, the whole uterus will be found in the pelvic cavity.

The hand can be passed over the horns of the uterus and the whole organ can be brought back into the pelvis, thus tensing the broad ligament and facilitating the finding of the ovaries. The oviducts, broad ligament and ovaries are next palpated. Some operators who who have small hands and arms are able to introduce one into rectum and the other into the vagina and cant the uterus over backwards into the palm of the hand in the vagina and massage it by rolling it gently between it and the hand in the rectum.

The cervix when much enlarged and indurated can be easily diagnosed by this method. The non gravid uterus when healthy is rounded, tubular and fairly firm, yet it is compressible, it is not soft and flaccid like a bowel. Should it be lying low down, flattened soft and flaccid, it is not normal. A newly gravid uterus has this "fech" to a considerable degree, but there will be the history of service and the presence of a corpus luteum in one ovary and the presence of fluid in the uterus. In such a case the organs must be carefully handled, or palpated, as the young foetus is easily injured. The broad ligament would show a degree of relaxation, and the uterine wall would be thinner. One horn would be appreciably larger than the other, while this would not be in a hydro or pyometra, the uterus would not show the same tendency to sink to the floor of the pelvis or go forward on to the abdominal floor. It would, of course, be impossible by palpation to detect the presence of a foetus. The contained fluid if pregnant is much thinner and fluctuates on the slightest pressure. The uterus does not seems so full, nor so centrally located as in pyometra, and the pulsations in the uterine artery will be slightly easier to feel. The horns of the uterus are turned downwards but the points can easily be palpated. Next examine the ovaries. These lie one to each side of the point of the horns in the anterior border of the broad ligament from one to nearly two inches distant. The ligament between the horn and the ovary is thicker than that above the ovary, but the small tubular oviduct can not be detected if it is normal. The canopy or fimbriated extremity of the fallopian tube can be felt as a slight tumiefaction of the ligament just at the ovary, it feels more fleshy and not so firm as the ligament.

The small fallopian tubes have a complex lining of mucous membrane. It is arranged in longitudinal folds with a ciliated epithelium, the cilia are believed to always wave towards the uterine horns. One would naturally suppose that this would interfere with the progression of the spermatozoon towards the ovary. It is unnecessary to discuss this physiological process here, though one would naturally think that the cilia were placed there to assist the spermatozoon on its way to the ovary, as well as to carry the fertilized ovum to the uterus, as the ovum unlike the spermatozoon has not the power of movement, at least so far as known.

Occasionally the ovaries are not easy to locate, as other organs displace them, or they get folded underneath the broad ligament, but by drawing back the uterus and tensing the broad ligament, they can be located by gliding the fingers outwards while grasping the broad ligament beginning at the uterine horn. Normally the ovaries vary greatly in size, not only indifferent animals, but the one from the other, especially in heifers. With few exceptions the left ovary is much the smaller. A normal ovary is somewhat kidney shaped, only when quiescent it is flattened and softish. When active it is somewhat rounded and fairly firm. Probably the most difficult part of the whole subject is judging the condition of the ovaries.

When an ovary is inflamed it is enlarged, rounded and tense. The presence of a corpus luteum appears as a large round swelling about its centre and projecting above its free border. This body is very ofter larger than the ovary itself. A follicle appears as a small blister ¼″ to ½″ in diameter on the side of the ovary. An ovary in sterile cows often contains one or more rounded swellings or tumours. An inflamed ovary is often painful when pressed between the fingers, as evidenced by the cow squirming. The normal ovary is less rounded, less tense, and more compressible than the testicle of the male.

After completing the examination per rectum one proceeds when necessary to examine per vagina. Another good washing to parts, hands and arms is essential. Then pass the hand through the vulva, the opening into which is often too small to allow of this being easily done. Separate the lips of the vulva with one hand, insert the fingers of the other cone-shaped, and rotate, at the same time pushing forward. In heifers, if this is done hurriedly the mucous membrane of the vulva superiorly will tear and the blood which escapes will destroy slight evidence of pus in the vaginal mucous. It is better in such cases to do only a moderate amount of dilatation and wait for an hour, then try again.

After passing hand into vagina take up some of the mucous, withdraw and examine carefully for pus. Never neglect to stretch it into a thin sheet and hold it up between you and the light. Such things as imperforate hymen, or fibrous bands "remains of it" may be found stretched from roof to floor at the junction of vulva and vagina, or a stricture may be found just posterior to the cervix, or again a fibrous band may be stretched across the vagina at same place so close to cervix as to interfere with its development. In most cases these bands are at least broad enough to cover completely the cervical canal and prevent conception. These should be excised, the passage dilated and douched thoroughly with saline solution a few times.

(To be continued.)

## PERSONALS

Dr. J. H. George is temporarily engaged at Windsor, Ont., on Port of Entry work.

Dr. Bousefield, of Prince Edward Island, is visiting London and Toronto.

Dr. W. W. Stork recently returned from his vacation spent at his summer cottage at Credit Forks, Ontario.

Dr. M. L. Carey is representing the Health of Animals Branch at Brantford, Ontario.

Dr. E. R. Farewell, of the Health of Animals Branch, has taken over the work at London, Ont., vide Dr. Tennant, resigned.

Dr. G. E. Stanley, of the Meat Inspection Division, has moved to Sussex N. B., for temporary duty.

Lieut.-Col. D. S. Tamblyn, of Calgary, Alta, called upon the Record at 110 University Avenue, during October, whilst on his way home from Montreal.

# Biologic Preparations

**Ronald Gwatkin, Dept. of Bacteriology, Ontario Veterinary College.**

(Continued from last issue.)

While discussing those substances that produce an active immunity the vaccine used for the prevention of rabies must be considered. This is not a cure, but distinctly a prophylactic measure, and injections must be commenced as soon as possible after the wound has been inflicted; as this gives the vaccine a chance to stimulate sufficient antibodies to attack and destroy the virus before it can reach the central nervous system. When this does occur the prophylactic "treatment" is useless.

The Pasteur method of preparing this vaccine is still in general use and consists of subcutaneous injections of saline suspensions of the spinal cords of rabbits killed with a fixed virus and the cords dried for a varying number of days over caustic potash. This reduces the virulence in a regular manner in accordance with the number of days it is dried, and each day a bit of cord is injected that has been dried a shorter time and is consequently more virulent. In one method commonly used for humans, the injections, twenty-four in number, cover a period of twenty-one days, commencing with eight-day cord and finishing with two-day cord, the doses being repeatedly lapped over to give fuller protection. The cord if not required for use at once may be preserved in glycerin and will retain its virulence for several weeks.

Pasteur's method has been changed in three different directions; lengthening or shortening the period of treatment; commencing the inoculations with a less attenuated cord (Pasteur started with a fourteen day cord whereas it is now found that an eight-day cord is safe); and increasing or decreasing the amount given at each injection. The fixed virus used to inject the rabbits is obtained by successive inoculations into rabbits with a virus taken from a dog with street rabies, the virulence of which after about the fiftieth passage is so raised that the incubation period in the rabbit is reduced to six or seven days at which it remains fixed. The value of the fixed virus is that the dose can be more definitely regulated by subsequent attenuation. Other methods that have been used to attenuate the virulence are Hogyes method of dilution, exposure to the action of heat, cold, glycerin, gastric juice and phenol.

The virus used in the simultaneous method of vaccinating against hog cholera must also be regarded as a vaccine. The nature of the virus is not understood as it is filterable and ultramicroscopic, but its action is to stimulate the body to produce an active immunity, and as it contains living organisms it is not essentially different from any other vaccine, except that it can not be standardized by optical methods.

Antisera are a very important group of biological products that are made use of to produce a passive immunity for the prevention and cure of disease. The antisera may be divided into two main groups, the antitoxic and the antibacterial sera.

The antitoxins are a group of antibodies that are produced by the body in response to the injection of exotoxins, and they are specific for the toxin that has stimulated their production, acting directly upon the poison secreted by the living bacterial cell and neutralizing its toxic property. Only a limited number of bacteria produce a true soluble toxin, such as B. tetani, B. botulinus and bacilli of the gas gangrene group.

Tetanus toxin for the production of antitoxin is procured by growing B. tetani in large flasks of veal broth after preliminary cultivation in glucose broth for several generations. After inoculation the flasks are incubated in the dark for fifteen days at 37° C. The broth is then filtered through paper pulp and finally through a sterile Berkefeldt filter. The filtering must be carried out in a darkened room to prevent weakening the toxin by the action of light. A small quantity of phenol is added to the toxin, it is tested for potency and stored in the ice chest.

To produce the antitoxin, moderately young, vigorous, healthy horses are used. They are mallein tested and are then given a dose of antitoxin to passively immunize them, in order that larger doses of the toxin may be used to commence with. Two days later a very small dose of toxin is given, well diluted in saline. This dose is increased 50% each injection up to a certain point and then a 10% increase is maintained until the desired strength of antitoxin is arrived at, which is found by testing the serum obtained by small trial bleedings. A large bleeding is then taken and two more doses of toxin given and seven days later another bleeding taken. The process is repeated in this manner. The blood is collected under aseptic conditions and allowed to clot, the serum is drawn off in four days and stored in flasks If a concentrated antitoxin is required the blood is aseptically drawn into vessels containing sodium citrate solution and when the cells settle out the plasma is treated with ammonium sulphate and filtered. Details of this need not be gone into here, but a serum is obtained which has a much higher unit content and contains less protein.

A unit of tetanus antitoxin may be briefly defined as being the amount of antitoxin that will save the life of a 350 gm. guinea pig for 96 hours against 1000 minimum lethal doses of toxin.

While tetanus antitoxin is the best known of the antitoxins used in veterinary practice there are others such as that produced for the prevention and treatment of botulism and which is at present being used experimentally for the prevention and treatment of this disease in animals. The treatment of tetanus with antitoxin requires large doses, and though this method is the only one of any value the result is always in doubt; but a small dose at the time a wound is received will efficiently protect against the development of the disease. It should always be used prophylactically in a district where tetanus is prevalent.

The antibacterial sera affect the bacteria themselves and destroy or paralyze them. This group of antisera has a wider use in veterinary medicine than the antitoxic sera, of which that for tetanus is the only one generally used at present.

In the production of these antisera the same qualifications apply to the horses used as for the antitoxin horses. Old horses do not as a rule respond as well to injections, and some horses, though young, are found unsuitable as the potency of their serum cannot be brought high enough. The general method is to inject the horses under aseptic conditions with gradually increasing doses of the organism against which it is desired to produce the serum. The bacteria are grown on media suited to their food requirements and when preparing them for injection care is taken to avoid injecting the media; for example if grown in broth the bacteria should be thrown down by centrifugal force, washed and resuspended in saline solution. For obvious reasons the strains selected for the production of a stock serum should be polyvalent. Injections are usually made intravenously, commencing with very small doses of dead or attenuated bacteria according to the microorganism being used. Fully virulent bacteria may be used at first in some cases. The frequency of inoculations depends upon conditions. Daily injections alternating with periods of rest is a successful method. Three to five successive daily injections are given and then several days rest. When the serum has been brought up to the required standard weekly injections are usually enough to maintain it.

Antibacterial sera cannot be tested for strength in units like the antitoxic sera, but some idea of their strength may be obtained by use of the serological tests, and by protection tests, especially where the bacteria tend to be invasive. The blood is collected under aseptic conditions and the serum removed and preserved. Probably many different types of antibodies are present in these sera in distinction to the antitoxins where in all probability there is only the one that gives the name of these types of antisera.

Examples of antibacterial sera are anti-anthrax, anti-blackleg, anti- hemorhagic septicemia and anti-streptococcic sera. Anti-hog cholera serum is probably similar, but on account of the virus being filterable and ultramicroscopic it is difficult to judge.

The value of these antibacterial sera lie principally in treatment, or when it is desired to confer a brief immunity, either while an active immunity is being build up, as in the simultaneous method of immunizing against anthrax, or when an animal is expected to be exposed to infection for a short time. If a serum rich in protective antibodies be added to the blood of an animal in need of this particular type it is evident that the reinforcements thus supplied must be of the greatest value. Unfortunately, however, antisera cannot be produced for all bacteria, and the value of some in use is decidedly questionable.

## PEDIGREED STOCK VS. PEDIGREED CAT

A Persian kitten, perfumed and fair,
Strayed out through the kitchen door for air,
When a tom cat, lean and lithe and strong,
And dirty yellow came along.

He sniffed at the perfumed Persian cat,
As he strutted about with much eclat,
And, thinking a bit of time to pass,
He whispered, "Kiddo, you sure have class."

"That's fitting and proper," was her reply,
As she arched her whiskers over her eye,
"I'm ribboned, I sleep on a pillow of silk,
And daily they bathe me in certified milk."

"Yet we're never contented with what we've got,
I try to be happy, but happy I'm not.
I should be joyed, I should, indeed,
For I certainly am highly pedigreed."

"Cheer up,' said the tom cat with a smile,
"And trust your new found friend awhile.
You need to escape from your back yard fence,
My dear, what you need is experience."

New joys of life he then unfurled,
As he told her tales of an outside world.
Suggesting at last with a luring laugh,
A trip for the two down the primrose path.

The morning after the night before,
The cat came back at the hour of four,
The look in her innocent eyes had went,
But the smile on her face was a smile of content.

And in after days when the kittens came,
To the Persian kitten of pedigreed fame,
They weren't Persian, but black and tan,
And she told them their Pa was a travelling man.

Hamilton Bassett, in "Veterinary Medicine."

# *Strangles, Influenza and Immunity

---

### T. C. Evans, Toronto, Ontario.

The question which confronts the writer is, whether strangles, distemper febra pyogenica and influenza of horses are variations of one and the same disease produced by one type of organism, a streptococcus?

Schultz found in all cases of strangles and influenza which he investigated a minute round organism. Schultz was the first to associate streptococci with the disease, and to date, as far as modern bacteriology has progressed, nothing has been achieved to discredit the work of this early investigator.

Baruchello found streptococci in the foeces of a large number of normal horses, which he considered harmless habitants of the intestinal canal, but which became harmful under certain conditions. The writer has found streptococci in the normal secretions of apparenty healthy horses.

Schultz, considers his strangles streptococci an independent species, while Foth believes Schultz diplococcus of influenza and his streptococci of strangles to be indentical. In support of these observations, the writer has found that where an attempt has been made to raise the virulence of a a strain of streptococci which had been obtained from an acute case of strangles, the morphology of the organism changed to a very remarkable degree. This change may be termed evolution, because in the initial staining from the abcess pus, the streptococci are seen to be perfectly spherical bodies occurring in chains. There chains are usually long and twisted. Inocculated into white mice and fresh stainings made from glandular tissue of those that succumb, the picture showed that the morphology of the organism had changed so that it was no longer round but more of an oval shape and in short chains. Successive inoculations and cultures in a 10 per cent., raw serum bouillion from the same source, eventually produced an organism in shape, elongated, with increased measurements and presented in pairs.

Strangles, distemper and influenza is proven to be an infectious disease, generally attacking the young horses and by one attack conferring immunity to subsequent infection. When attacking older animals, who for reasons of rural segregation have previously escaped infection, the disease usually runs a benign course.

The disease is worthy of consideration and study from a point of view of economy. This is especially true in cases where it is necessary to move horses in large numbers from any given point to a locality where they will afterwards live and work together. It is practically a foregone conclusion that where any number of young and therefore susceptible animals, are shipped together in freight cars, that the opportunities for infection are accentuated 100 per cent. over and above the normal chances of infection had they remained in their own stable or on the farm.

Predisposing causes influencing an attack are, any changes which may lower the vitality, such as excitement during shipping, exhaustion following lack of food and water and exposure to cold winds and wet weather.

It is not regarded as a dangerous disease, because after the convalescent stage has passed the animal usually regains its normal tone and vigor. In a small percentage of cases, where breaking down of the submaxillary glands occur, one sometimes hears of the animal developing into a "roarer" and again an apparently mild appearing case of influenza, may, on the third or fourth day present the alarming symptons of pneumonia. But these cases are fortunately rare.

* A number of the more serious cases were treated by Dr. R. W. Devereaux, Veterinary Surgeon of Brantford, Ontario, to whom the author is indebted for many opinions expressed in this article.

In a recent outbreak of influenza among the horses which attended a Militia Training Camp this season, it was seen that the symptoms were, for the greater number of those affected, to be those of a catarrhal nature. The prevailing symptoms consisted of a period of dullness accompanied by anorexia and rigors. At this stage the entire attitude of the horse was one of utter dejection. Standing with head down, listless, unobservant, muscular tremors, and once in a while a dry cough. The discharge from the nostrils, at the onset was thin and watery, changing into a thick and purulent mucus as the disease progressed. Temperature varied from 103° to 105° F., with rapid breathing. With many, an improvement commenced from this point. Recovery was very rapid, only one or two developing alarming symptoms. But all recovered and, as far as is known, none of those affected are in any way the worse to-day.

At this stage, with a knowledge of contributary causes, one feels justified in suggesting definite experimental work to be undertaken in future, with a view of preventing or lessening such sporadic outbreaks of strangles and influenza. Past experience demonstrates beyond a shadow of doubt the infectivity and methods of dissemination. Whether en route to Camp by Rail, or by Boat, during Training where horses are collected together from all parts, or on the return journey home, one affected horse may act as the nucleus for the infection of the entire number of its companions.

Our first consideration therefore should be to endeavour to establish an immunity by the use of specific bacterins and sera, because these are applicable and reasonably indicated. Annual experiments have proven that susceptibility and immunity are relative terms, and it is therefore considered expedient to suggest that horses subjected to infection be immunized by prophylactic vaccination whenever possible.

A very suitable opportunity for administering a bacterin or serum would be at the time horses are examined, accepted and recorded for Training Camps.

During the Camps of 1911-12-13 many horses in the Eastern Commands were inoculated with killed cultures of strains of streptococci, supplied by the Biological Laboratory, Health of Animals Branch, Department of Agriculture, Ottawa. The vaccine was prepared by taking cultures which had been passed through a series of animals increasing its virulence. White mice were inoculated with small quantities of discharge from nostrils and from strangles abscess pus obtained from a typical case.

The cultures recovered from the mice were then grown in raw serum boullion and prepared for use by the addition of heat and glycerine. These suspensions inoculated into young horses prior to exposure to infection were found to establish a good immunity against strangles. In every case where this vaccine was used the reports were very satisfactory and the original letters confirming same are still on file and open for perusal.

---

Dr. James A. Waugh, a good friend of the Record, writes to say that Dr. W. E. Langford, O. V. C. '81, located in practice at Keyser, West Virginia, has been elected President of the West Virginia State Veterinary Medical Association. Dr. Langford is also Secretary of the State Examining Board for West Virginia.

Dr. H. H. Ross, graduate of the Ontario Veterinary College, '05, has received the appointment of instructor of Anatomy at the Ontario Veterinary College. Dr. Ross is a First Prizeman in Anatomy and was in the Gold Medal Class of his graduating year.

When a hurrying man looks at a pretty girl and gives a violent start, it doesn't mean that he is charmed. It means that he has just remembered to get that paint for the porch furniture. —Kingston British Whig.

# The "Compleat" Jockey, 1688

**Ronald Gwatkin, Ontario Veterinary College**

Extracts from an old book, "The Experienced Farrier," having met with some approval it was considered that it might be of interest to publish a few passages from a very similar work "The Compleat Jockey" printed in the year 1688 in London. It is composed of two principal parts; the first containing "All cures Physical, or such Infirmities, as being inward, crave the administration of Physick, and are called in Horse-leach craft, Horsesickness." The second book of "Markham's Master-piece," as it is modestly described, consists of "All Cures Chyrurgical, or Chyrurgery, and are called in Horse-leach craft, Horses-sorances." The following are some of Gervaise Markham's chapters from both books.

"Chap. XCIII. Of the rage of Love in Mares. It is reported by some of our English Farriers, that Mares being proudly and high kept, will at the spring of the year, when their blood begins to wax warm, if they chance, when they go to the water, to see their shadows therein, that presently they will fall into extream love therewith, and from that love into such a hot rage that they will forget either to eat or drink, and never cease running about the pasture, gazing strangely, and looking oft about and behind them. The cure of this folly is presently to lead the mare to the water, and there to let her see herself as before, and the second sight will utterly extinguish the memory of the first, and to take away her folly."

"Chap. XLVI. A most rare and certain approved medicine, to cure any High Running Glanders, called the Mourning of the Chine, held of all men incurable.—This disease to my knowledge, there is not any Smith or Farrier in this Kingdom, can tell how to cure; for it comes not to the extremity, till the horse have run at his nose a year or more, and have at the roots of his tongue, a large lump gathered, which will not be dissolved. Now for mine own part, it is well known I have cured many with this medicine only. Take of Auripigmentum and Tuffilaginis beaten into fine powder, of each of them four drams: then beating them with fine Turpentine, bring them into a paste, then make of it little cakes or Troches, as broad as a groat, and dry them: This done lay about two or three of them on a chafing dish of coals, and cover them with a Tunnel, so that the smoak may come out only at the end thereof, and so without any loss ascend up into the horses head through his nostrils; then ride the horse till he begin to sweat; do this once every morning before water, till the running be stopped, which will be in a very short space, considering the greatness of the Disease."

"Chap. XCV. Of Mares that are hard of Foaling.—If it happen by any mischance, or otherwise, that the passages or other conduits, which lead from the matrix, be so straightened that the mare cannot foal, and so be in danger of her life; then it shall be good that you help her by holding and stopping her nostrills with your hand in a gentle manner, that her breath may not have passage, and she will Foal with a great deal the more ease, and much sooner: and sure the pain is nothing, because a mare always foaleth standing. Now if at any time when your mare hath foaled, she cannot void her Secundine, which is the skin wherein the foal is wrapped, in that natural manner as she ought, you shall then take a good handful or two of Fennel, and boyl it in water: then take half a pint of that, and another half pint of Old Wine, and put thereto a fourth part of Oyl, and mingle them all together over the fire, and being but lukewarm, pour it into the mare's nostrils, and hold her nostrils close with your hand, to keep it in a pretty while after, and no question but she will avoid her Secundine presently."

"Chap. XCVII. Of the Drinking of Horse-Leaches by Horses.—If at any time a horse drink down horse-leaches, they will suck his blood and kill him. The signs are, the horse will hang down his head to the ground, and abundance of filthy slaver will fall from his mouth, and sometimes some blood also. The cure is presently to give a pint of Sallet-Oyl to drink, and that will make them fall away and kill them. But the best is, to give him half an ounce of Diapente brewed in a pint of strong beer or ale."

Diapente is apparently much relied upon, and is prescribed constantly throughout the book. The composition of it is contained in Chap. CVI as follows: "This word Diapente is as much as to say, Composition of five simples: for the receipt is thus compounded. Take of Gentian, of Aristolochia, of Bayberries, of Myrrh, and of the shavings of Ivory, of each a like quantity, beat them into a very fine powder, and then seare it. This powder is praised to be a Sovereign Preservative or Medicine against all inward diseases; and therefore I would wish every Farrier, and all such as are the Masters of good horses never to be without it."

"Chap. CLVII. Of Hurts done by the Tusks of a Boar.—If an Horse be stricken with the Tusks of a Boar, you shall then take Copperas or Vitriol and the powder of a dog's head, being burned, after the tongue has been pulled out, and cast away, and mixing them together, apply it once a day to the sore, and it will cure it. Yet before you dress it, first wash the sore very well, either with vinegar or with white wine, or urine."

"Chap. CXCIII. How to make a horse that tires or is restiff, to go forward.—If your horse (as it is the common nature of Jades) through the naughtiness of his nature, or dullness of spirit be either so restiff, or so tired, that he will not go forward a foot, but standeth stock still, you shall then make a running suickle of a good small cord, and put it about his Cods or Stones, in such sort that it may not slip; then you shall draw the rest of the cord between the girths and the horse's body, and bringing it up just between the horse's forelegs, be sure to hold the end of the cord in your hand as you sit in the saddle, then ride the horse forward, and when he beginneth to grow restiff or to stand still, then pluck the cord, and cramp him by the stones, and you shall see that immediately he will go forward. And in this same manner you shall use him for at least a fortnight together and it will clean take away that evil quality."

At the end of the book is an appendix of treatments for diseases in cattle, sheep, hogs and goats. After his cattle remedies the author states: "These remedies afore-mentioned are the best (as by experience several have found) for oxen, cows and calves, some I know by my own experience; others are collected out of such skilful authors that would never have prescribed such medicines, if they would not certainly have cured the beasts."

"A certain cure for the Murrain or Plague amongst cattel.—There are several remedies for the Plague or Murrain amongst cattle if taken betimes. Infectious blood causes the disease; it is vulgarly discerned in the head by a swelling, they will have great eyes that will run with water; they will eat though they are sick, and once they froth at the mouth they are near Death. For cure of this disease, it is thought good of some to bind a small cord hard about the neck, then take a Launcet and strike on the further side where you will find a vein, bleed him a pint or more, and so for the other side of the neck. It will staunch, the cord being taken away, but it is more dangerous of bleeding still if the sign be there; and if it continue, put to it nettles and wild Tansie bruised with salt, and some give them drinks. Thus serve your infected cattel, being altogether in one pasture, by this means you will avoid great peril in this disease. The Murrain is caught by venomed grass, by company, by poisoned water, and by hunger."

"The Turning Disease in Sheep.—Sheep oftentimes hold their head on one side, by reason of this turning sickness. Some shepherds give advice, that if the sheep hold their heads on the right side, ye must cut off the horn on the left side, for under the horn there lies a worm which will be killed if you annoint it with tar, and they will be well again."

"For Loose Teeth.—If your sheep's teeth be loose, let him blood in his gums, and under the Tail, and afterwards, rub his teeth with earth, salt and sage, and they will fasten."

"Against the Gall in Sheep.—Sheep will stand shrinking their four feet together, if they are troubled with flowing of the gall; you must let him blood under the tail, then give him to drink half a spoonful of good vinegar and as much Aqua Vitae mixed together, and he will be better."

There are many interesting things in the hog section, including full directions for spaying a sow, but space will not permit of further extracts at this time. The old English printing and peculiar spelling and punctuation add considerable quaintness, at the same time making it difficult to read. There are many little marginal illustrations throughout, and several large plates showing the anatomy of the horse and the different points attacked by disease, which illustrations the author explains are above question in regard to accuracy and completeness.

## A MENAGERIE AT SEA

Extracts from the diary of Mr. E. W. Harper, F. Z. S., who recently brought a large collection of animals from Calcutta to London, show, says the Times, that the care of a menagerie at sea is no easy task.

During the early part of the voyage the heat was terrific. The two tigers were prostrated, but were revived by a bucketful of water dashed in their faces. A pig-tailed monkey, a tragopan, and two fly catchers died of apoplexy. On the third day at sea, the captain had a canvas shed erected on the upper bridge for the small birds, which were suffering from the absence of a breeze. During the night the elephant managed to reach a bag containing her supply of sugar for the voyage, and looted the lot.

On the fourth day the tails of six Himalayan blue magpies had to be cut, as they were wrapping them round their perches. At Madras, where most of the animals had to be shifted to allow for the discharge of cargo, the elephant got restless because of the noise of the cranes and stopped eating. Green fodder could not be secured; the iron decks became very hot, and all the animals required constant watering. Three bears suffered much from the heat, and the eyes of the elephant began to run, because, according to the native keeper, she was leaving India.

On the second day out from Colombo the sea began to be rough. Both tigers refused food, and the elephant ate very little, refused to lie down, and suffered from a chilly trunk. In the evening heavy seas were shipped, and the tigers were again prostrated. During the stormy weather, which continued for three days, the cage containing a civet cat broke, the civet escaped, hid by day, and at night helped itself to some of the rarer birds before it was caught. A gibbon went down to the engine-room and burnt it foot on a hot plate, and a small snake which escaped was so badly injured during its recapture that it had to be destroyed. On the way to Marseilles the weather became cold, and the elephant caught a chill, but recovered after the application of blankets and some big doses of quinine.

Between Marseilles and London the elephant plunged her trunk for half a yard into a pot of white paint that had been left in her way. She allowed the keeper to clean some of it with an oily rag, but would not let him touch the end of her trunk. Accordingly her front legs were well oiled and she cleaned the tip of her trunk by rubbing it against the oily surface. During the remainder of the voyage she behaved well, except for tearing into strips two of her blankets and the awning which sheltered her.

—The Veterinary Record (England).

# Instructional Value of the Canadian Army Veterinary Corps.

**"Biscum", Medicine Hat, Alta.**

Very little has been recorded concerning the achievements of the Canadian Army Veterinary Corps in the Great War. When one considers that it was responsible for the general health and physical condition of approximately 25,000 horses and mules, which comprised the strength of the Canadian Corps and at certain times, counting attached Units 52,000 animals, it is easily realized that the responsibility was far from a light one.

While the Veterinary Department was under the direction of the British Director of Veterinary Services, the Administration of all forward area work was self contained, directed by the Assistant Director of Veterinary Services at the Canadian Corps Headquarters.

As an Instructional Agent the C.A.V.C. (C.E.F.) played an important role. Veterinary officers in addition to other duties imparted advice to officers and men directly charged with the care of animals from a point of view of preventative measures against disease, bombing, shelling, gas, and wastage generally. A great responsiblity when you come to consider that horses were absolutely essential for the transportation of ammunition, forage and rations from the Divisional Dumps to Gun Pits in forward areas, and in thousands of places where mechanical transport was useless.

These noble creatures traversed fascine made roads, across open country over shelled and gassed areas undaunted, without Military Honors, other than the simple affection of their drivers. If one will only reflect for a moment and review what our horses and mules went through, I feel sure you will class them as heroes everyone, and that the least the nations who participated in the Great War can do is to perpetuate their memory by erecting a suitable memorial. It is stated that our men "Won the War"; quite so, but with the help of our animal friends, for as one of our most noted Generals remarked to me at an inspection of his Brigade Transport during the winter of 1916-17, "No horse, no transport; no transport, no battalions." You will therefore note he realized that the horse and mule were indispensible even in Trench Warfare, and was anxious that the animals of his brigade should receive the uttermost attention regarding their care and management. For, had his transport failed him at a critical moment his men would have suffered from lack of food and ammunition and the battle lost. No stone, therefore, was left unturned to see to it that our animals were supplied with the best possible shelter and rations at all times.

Animal management in the field played a great part in maintaining the physical condition of our animals. "Standings" were provided when possible, constructed of lumber, galvanized iron roofs and macadamized floors. These improvised stables protected the animals from rain, wind and mud, while they were fed from mangers thereby permitting the horses to partake of a full ration which was not possible in open lines during the winter on account of the adverse conditions. Apart from the foregoing, grooming was also made possible in the winter season.

"Standings" were camouflaged to prevent the enemies's aviators from observing same when reconnoitering, while traverses were built around for protection against bombs and shell splinters. Some Divisions even constructed equine dug-outs. All of which was very important towards combating wastage.

Open horse lines during summer months were not so bad but during the winter such lines were generally in a fearful state. Animals were knee deep in mud and exposed to rain and winds, and received practically no grooming to speak of.

These terrible conditions caused them to be restless, with the result that one third to one half of their food was lost through the horses tossing their heads in the air thereby throwing out large quantities of oats from their nose bags; while they trampled their hay in the mud to such an extent that only half the quantity was consumed by each animal. Hay was fed to horses in string hay net, having a large mesh.

I remember one British Artillery Division in open lines losing eighty-five per cent. of their animals within three weeks. So deep was the mud in which these animals stood that a number died in a standing position. The most remarkable feature about this division was that there was a Horse-Adviser for every brigade. **They certainly did not bring their Animal Management into play** and they were adverse to accepting any advice from their respective Veterinary Officers with a view to overcoming their difficulties.

The appointment of Horse-Advisers and Horse-Masters in my opinion is suicidal. Veterinary services are responsible for the health and care of animals, and their advice should be sought by those in charge of transport, and the advice obtained carried into effect. The great trouble about the appointments of Horse-Masters and Advisors was that "Jobs" had to be found for a certain number of old "Dugouts", unfortunately, at the expense and discomfort of those who could not speak for themselves.

**Foods and Feedings.**

It is said that an army fights on its stomach; quite true, there should be no test of physical endurance without a liberal supply of food, what is true of man is equally true of animals. The only difference being that while one can voice his complaints and objections, the other must suffer in dumb obedience; all the more reason, therefore, that the wants of the latter should receive the utmost consideration. No animal can perform hard work such as war conditions necessitates without proper attention by those responsible for his food, especially in regard to quality and quantity.

Great care had to be exercised in preventing hay wastage in open lines. Overhead hay-net lines were recommended and brought into use by Canadian Veterinary Officers. This simple device prevented a great deal of wastage, for animals were not able to trample their hay in the mud which was the case when the hay nets were suspended from the breast ropes.

There is no doubt that a ration consisting of ten to twelve pounds of oats and ten pounds of hay was ample for our animals, providing it was judiciously fed. Where chaff cutting machines were used one always found the physical condition of the animals to be far ahead of those who did not take advantage of such machines. Crushed oats, where possible, were also fed. Boiled feeds in winter months proved a very satisfactory means of maintaining flesh.

Bran, linseed, carrots, beets and green fodder was received periodically and given over to the Veterinary Officers to issue where they considered such food most needed.

It has always been my opinion that our animal wastage would have been greatly reduced had the British taken advantage of chopping the hay, and crushed the oats at the Base, and sent them forward compressed. Such food could have been fed from nose-bags and the wastage minimized, while the saving in transportation alone would have covered the expense in affecting the change.

A careful Transport Officer would take advantage of grazing whenever possible and give his attention to all matters appertaining to food and the feeding of the animals under his charge, particularly with regard to maintaining a good supply of nose bags and hay-nets.

Mobile Veterinary Sections were generally examples of perfect horse management. The officer commanding these units took advantage of everything possible, with a view of bringing their Section horses to the highest physical standard, and were often commended by the D.V.S., (British) at his inspections.

Canadian Infanty Bdes., C.A.S.C., C.A.M.C., Ammunition Columns, C.E., and Machine Gun Brigades, all took a keen interest in their horses, the most unfortunate being those with the Canadian Field Artillery. Here the animals had no wagon line officers to supervise their wants, consequently they suffered terribly through neglect, especially when on open lines. Battery Captains were really responsible, but in the large majority of cases they were too busy up with the guns, therefore had no time to give proper attention to the horses. It was a very lucky thing that Britain maintained command of the seas so that the question of re-mount shortage never seriously affected the field artillery.

**Watering and Supply.**

The Engineers were responsible for the supply and maintenance of same. Seldom were the French and Belgian ponds used, for the simple reason that the water contained therein was the drainage of the streets, and often manure dumps, which meant that the ponds were nothing more than cess pools of the foulest kind which the animals refused to drink. Well I remember the water conditions during the Battle of Amiens; clean water then was almost impossible to obtain, and horses and mules were led to the village ponds, but only to refuse to drink. These conditions were seen more in open warfare, and contributed largely to losses through debility.

In trench warefare special attention was given to watering facilities. Troughs were constructed off main roads and piping laid connecting up with the main water supply. The approaches to these troughs were macadamized and the time schedule for units to water horses prepared. Such parades were in charge of an officer or N.C.O. and strict discipline was maintained at the troughs so as to prevent confusion and to permit the animals being watered properly. The water supply at Vimy Ridge was marvelous, our Engineers had a beautiful supply of water in troughs on the crest of the Ridge the morning following the taking of same. Sick and injured horses enroute to the base hospital by train were always supplied with ample water for the journey, a duty of the Officer Commanding Mobile Veterinary Sections or Veterinary Evacuation Stations whichever was responsible for the shipping. If elaborate precautions had not been taken to provide an ample water supply by those responsible I am afraid our wastage in animal flesh would have been much greater.

**Clipping and Clothing.**

Much criticism was put forth during the Winter of 1916-17 and Veterinary Officers were assailed for the policy adopted re clipping, and there is no doubt that many of the critics hold the same view to-day on that question. Whereas in the Winter of 1916-17, if they had assisted to their uttermost in the early clipping operations, our animal wastage would have been reduced considerably. I summon up the situation regarding our animal wastage as follows:—Lack of confidence in the clipping order; lack of organization in so far as carrying same into effect; lack of bulk food; lack of grooming, exposure, exhaustion and mange.

A large number of horses became debilitated owing to late clipping and exposure. Those who fought clipping until the months of December or January, when they were forced to clip because of lice and dirt, found that they were in the midst of winter and that their animals were becoming wrecks, starved to death by cold and exposure.

Those who organized and completed their clipping before the end of November suffered very little from mange or debility.

Another point not generally admitted by "Critic of Clipping" was that the majority of mange and debility cases were those animals not clipped. In the British Artillery Division I have referred to as losing 80 per cent. of their animals not one was clipped, yet 90 per cent of their evacuations were due to debility and mange. Another British Artillery Division where all animals were clipped early in the winter had very few evacuations from mange or debility. The British A.S.C. horses were clipped and are further examples of the importance of clipping in season.

**Mobile Veterinary Sections**

Every Division possessed a Mobile Veterinary Section, the function of which is to form a combined collection station for the sick and a field veterinary hospital. It is composed of an officer, non-commissioned officers and men of the Canadian Veterinary Corps, and is provided with its own transport for stores and equipment. Wherever the Division goes its Mobile Veterinary Section accompanies it.

The cases sent to a Mobile Veterinary Section are, broadly, of two kinds; those which will be fit again in a few days, and those requiring prolonged treatment. The governing principle in working a mobile section is that it must evacuate its serious or prolonged cases in order to continue its function as a collecting station in the field. The location of the Mobile Section is known throughout the Division, it flies a distinguishing flag, and at night distinctive coloured lanterns are displayed. In stationary warfare it is connected up by telephone with Headquarters of the Division and care is taken in selecting its site that suitable accommodation is provided. For example, it is no use locating a Mobile Veterinary Section some distance from a water supply or away from a main road.

In mobile warfare, the section, in addition to receiving sick, has also to collect any animals abandoned by the Division through wounds or injuries. There were always some which at the last moment were found unable to accompany their units and these were left with the inhabitants with a "Horse Recovery Form (I)" and with full knowledge that they will not be neglected. When a Division is moving, its Mobile Veterinary Section is the last to march off, and time is thus given to collect waifs and strays, and make a final evacuation of those animals intended for the hospital.

Every animal sent to a Field Veterinary Section is accompanied by a form, which gives the name of the unit to which it belongs, the disease from which it is suffering, and a description of the animal for the purpose of identification. On admission, this is checked, the diagnosis verified, and a serial number allotted, which is placed on a label tied to the head collar. A special colored label is also tied embodying the ascertained facts regarding the cause of inefficiency, a white label being used for medical cases, green for surgical, red for contagious, and blue for casting. In addition, each animal bears a stencil mark in paint on the quarter, showing the number of the Mobile Section to which it belongs.

A careful examination of all patients received by a Veterinary Section is of the utmost importance, for it is here that the cases of contagious diseases may be caught in their earliest stages. If the system described is followed out it is at once known to which unit of the Division the animal belongs, and notification of the existence of contagious disease is sent as a warning.

No more important duty exists than the early and thorough examination of the sick, otherwise cases of incurable and highly infectious diease, such as glanders, will be sent back to the base, and mixed up on the way with unaffected horses.

Great judgment is also required in deciding which of the ordinary cases may, with advantage, be retained for treatment, and which should go to the base hospitals. Every animal sent back unnecessarily is a loss to the Division and a source of expense to the Empire.

In the foregoing strain of my remarks it is intended to show how very extensively the Canadian Veterinary Corps can be used as an instructional agent in times of war and during peace.

# * The Common Clothes Moth--The Enemy of Every Good Housekeeper.

**Arthur Gibson, Dominion Entomologist, Ottawa.**

The well-known clothes moth needs no introduction to the readers of this journal. There are few indeed who at some time have not been irritated at finding serious damage affected to valuable garments or other articles. Its habits of destruction are every year apparent and during its active caterpillar period many thousands of dollars worth of woollen goods, furs, feathers, etc., are every season destroyed in the various provinces of Canada. Records of injury by the caterpillars in America were known as long ago as 1748. Like a number of our other destructive insects, the clothes moths are of foreign origin, probably of the Old World.

There are, in fact, two different clothes moths in Canada, namely, the Webbing Clothes moth, **Tineola biselliella,** and the Case-making Clothes moth, **Tinea pellionella.** In general, both are of similar appearance, being small moths of a satiny grayish-yellow color, with a wing expansion of less than half an inch. They are active little creatures, seldom seen during the day except when disturbed from their hiding places. They cannot of course do any damage in this stage. Their duty in life is to mate and lay eggs which hatch into small whitish caterpillars, the destructive stage of insect. The female moth lays her tiny pale-coloured eggs upon objects composed of suitable food for the young caterpillars to feed upon. The caterpillars do not grow very quickly as do many of the kinds which feed upon vegetable matter. The webbing species upon hatching from the egg at once begins to spin a silken path, which as the caterpillar increases in size, becomes conspicuous and is a rather thick, cobwebby, tube-like nature. The case-making species as its name indicated, constructs a movable case or jacket, within which it lives, from small particles of cloth upon which it feeds; the interior of the case is lined with whitish silk.

The caterpillars of both species attack materials of an animal nature, such as woollens, carpets, furs, feathers, etc. The chief injury is effected during the summer months. It is then that unprotected or forgotten clothing, etc., is noticeably damaged if not altogether destroyed.

### Control Measures

These insects like the carpet beetles and some other household pests thrive best in situations where there is relatively little disturbance. Woollens, furs, etc., hung up in cupboards or left in bureau drawers or on shelves during the summer are frequently damaged to such an extent that their use is no longer possible. It is, therefore, important that such articles should be aired and carefully brushed before they are packed away in the spring. The method of protection which I personally follow is to place winter clothing, etc., after brushing, in a tight trunk and fumigate the same with bisulphide of carbon. The clothing is simply placed in the trunk and on the top of the same a saucer is placed into which is poured about three ounces of bisulphide of carbon. The lid of the trunk should then be closed tightly and the fumigation allowed to continue for at least forty-eight hours. As the bisulphide of carbon is highly inflammable, no light, of course, of any kind, should be brought near the trunk while the fumigation is in progress. Afterwards, when the clothing, furs, etc., are removed from the trunk, they should be wrapped twice with strong wrapping paper, care being taken to see that the edges are turned so that no moths may gain access. When thus carefully packed they may be placed away upon shelves or other places without danger. Pasteboard boxes such as that in which tailors deliver suits are useful, strips of paper being pasted over the edges of the cover, so as to prevent the entrance of any insects. Many people use the paper bags known as "moth bags" for the protection of clothing, etc. As an added protection, camphor and naphthaline is frequently used. Such deterrents do not kill the insects and are only partially successful in keeping them away. Material found infested at any time may be fumigated as above mentioned, with bisulphide of carbon. Cupboards in which the insects are known to be present should be sprayed with benzine or gasoline, particularly all cracks and crevices. These chemicals will kill all the insects they reach.

---

*This article has been specially prepared for the Record by Dr. Arthur Gibson, Dominion Entomologist, Ottawa, Ont., and represents the materialization of a request made some time ago by a number of veterinarians who are quite often asked questions concerning the ravages of this pest.

The value of low temperature in preventing injury by clothes moths is well known and appreciated by such commercial establishments as storage companies, furriers, etc. The practice of sending valuable furs to such establishments is now largely adopted. On the other hand high temperatures are useful for destroying household insects, being particularly recommended for bed bugs. In superheating we have a remedy which is inexpensive, not necessarily dangerous to human beings or to dwellings and one which is certainly effective in killing all kinds of household insects in their various stages. Briefly, it consists in introducing additional means of heating so that the temperature in the infested rooms will be raised to 120 degrees F., preferably to 130 degrees or 140 degrees F., and kept at such high temperature for six hours. In our work in controlling bed bugs by superheating we have used various kinds of stoves to produce a temperature high enough to kill the insects, such as salamanders or plasterer's stoves, gas stoves and oil stoves. Standard thermometers should be placed on the wall of each infested room, about two feet from the floor, and readings made every hour to see that the necessary temperature is maintained. Superheating could not, of course, becarried on during the winter so conveniently as in summer when the outside temperature makes it easier to secure high temperature indoors.

A well known Canadian horseman, Major R. S. Timmis, D.S.O., has recently been elected a Governor of the Arab Horse Society of Great Britain. This Society was formed about six years ago to encourage the introduction of Arab blood into light horses, with a view to eliminating some of the undesirable malformations seen to day in horses bred for trotting speed alone; horses without stamina or carrying power. The election of Major Timmis to this position can be regarded as a compliment to Canadian horsemen and the forerunner of developments, leading up to the introduction of the Arab horse into Canada.

Dr. W. J. R. Fowler, of Toronto, made a professional trip to New York City, U.S.A., during the week ending October 15th, where he operated upon six racing horses for the relief of roaring.

### Social Distinctions

Little Elnore—What does you papa do?
Little Florence—He's a horse doctor.
"Then I guess I'd better not play with you; I'm afraid you don't belong to our set."
"I don't see why. What does your papa do?"
"He's a veterinary surgeon."

# Pure Milk and the Veterinary Practitioner.

**J. S. Glover, Toronto.**

Especially during the past few years milk has occupied a greater place in the minds of the general public than perhaps any other article of food, and although much has been written on the subject the writer will endeavour to bring out a few important points that should interest the practitioner concerning the production of clean, wholesome milk.

In order to produce good milk it is necessary to have healthy animals, and this is where the veterinarian in a dairying community plays a large part. (At least, until such time as the synthetic milk promised us by Mr. Henry Ford is placed on the market!) The veterinary surgeon's experience with bovine diseases enables him to distinguish between a cow that is healthy and one whose condition is such that her milk would be unwholesome, if not dangerous. His knowledge of the transmission of various diseases from the cow to humans makes his position one of great trust and one that cannot be too highly estimated, and he should warn the farmer against marketing milk from a cow that is suffering from disease. He is also in a position to advise how soon after parturition the milk is considered fit for human consumption, i.e., when the normal color returns and it does not coagulate when heated towards the boiling point. (It is surprising how many farmers do not know what colostrum is, or that colostral milk should not be marketed.

The health of a dairy herd depends to a great extent upon the type and condition of the dairy barn. This point is unfortunately frequently overlooked, and we often find cows crowded into dirty, ill-ventilated and poorly-lighted sheds. Any veterinary surgeon knows from his study of hygiene that these conditions are predisposing cause to disease, and hinder the progress to health of a sick animal. He can therefore advise the dairy farmer as to the proper conditions under which the cattle should be kept. Disinfection of the stable is of great importance, and this subject is thoroughly discussed by Dr. Bousfield in the excellent article which appeared in the September number of the C. V. R.

Another important consideration is the sterilization of milk pails, strainers, milking machines, etc. The utensils are probably the source of the greatest bacterial invasion of milk, and simply rinsing them in hot water after they have been washed in usual manner will not materially reduce germ content. Sterilization by the use of steam is not practicable nor could it often be efficient on the majority of farms. Some suitable disinfectant should therefore be used to prevent bacterial contamination of the milk by the utensils. The ideal sterilizing agent for dairy utensils is 'Sterilac,' a scientific combination of the Dakin chloramines in an alkaline base. It is sold in powder form, and is permanent and non-poisonous besides being harmless to rubber and metal. The objections that are sometimes made to the use of this product are that a farmer is likely to depend too much on its action and become otherwise careless in the handling of the milk, and that there is a possibility of a small quantity of the solution being added to the milk as a preservative. These reasonings are sane; but do not the same apply to other sterilizing agents of a somewhat similar nature? Of course, the farmer must be warned that any sterilizing agent should be used only as directed; and that it supplements, and does not replace, the thorough cleaning and rinsing with soap and water. Careful experiments have been carried out by several workers as to the efficiency of Sterilac, and it has proved to be the best product on the market for the sterilization of dairy utensils. From my own experiments I can conscientiously recommend its use as a factor in the marketing of milk of a low bacterial content.

Cooling the milk quickly to 50°F. or lower after milking each cow and keeping it cold until delivered is more important than a great many people imagine. The keeping quality of milk is greatly increased by holding the milk near the freezing point as this prevents the multiplication of bacteria. It should, however, be borne in mind that it is undesirable to hold milk, even if it is sweet, for two or three days before shipping it to the dealer.

Too much importance cannot be placed on the necessity of keeping dirt out of the milk, and not relying on a strainer to remove it. A large number of people still believe that no matter how much the milk may become contaminated by soiled hands and clothing, dust, dirty udders, etc., the straining cloth will rectify the condition, and it is quite reasonable to suppose that these same people would not be careful that the cloth was sterilized or even fairly clean. The filthy practice of straining dirty milk through a dirty cloth is a thing that cannot be too severely condemned, and there is a possibility, also, in my opinion, that the fat content is lowered, owing to some of the fat globules adhering to the particles of dirt and remaining behind on the cloth or cotton wool strainer. All possible precautions should be taken to prevent the entrance of dust or dirt into the milk and the milk should be strained through a clean and sterilized strainer in which is placed a piece of sterile cotton wool. A fresh piece of cotton wool should be used at each milking.

In conclusion I might state that the milk question with its various problems is becoming more important each year. The demand for a high-grade product is increasing as more of the public realize its value, and as I have tried to point out the veterinarian has it in his power to materially improve the standard of that greatest of foods—good milk.

## ONE VIEW CONCERNING EMBARGO ON IMPORTING LIVE CATTLE INTO GREAT BRITAIN.

### By "Veterinary Surgeon"

Much has been written and many indignant protests have been made about the Embargo against Canadian cattle entering Great Britain as "Stockers". This seems like agitating along wrong lines. In the first place Great Britain has a perfect right to exclude cattle if she wishes to. Canadian cattle are, in this respect, the same as cattle from the other dominions and countries. Responsible men concerned, in Great Britain, are quite aware that Canadian cattle are healthy. At the present time the Embargo is retained as a protective measure for home breeders, although originally it was framed for protection against disease, and serves this purpose for countries where contagious disease exists.

As Canada is an agricultural country, it would seem proper to ship only the finished article. The "Stocker" trade is not likely to be a stable trade from Canada as it depends largely on bad years in the West, when thousands of cattle cannot be fed through the winter. The logical procedure, when "Stockers" are available in the West, would be to fatten them in the East, where facilities exist for feeding such cattle. Shipping live cattle from Canada, except for breeding purposes, appears wasteful. Probably the best method would be to have killing plants with proper cold storage at the ports. Ships fitted with chilling chambers would, of course, be necessary. The time at sea to Great Britain, where there is a steady market, would not necessitate freezing the beef—chilling would be sufficient.

In this way a large amount of labour would be employed in Canada.

The by products, hides, horns, offal, etc., would be available for manufacture here and for covering the expense of slaughtering, while only the finished article would be exported. This seems economical from an agricultural country with such resources as Canada.

Proper organization would be necessary and if information in this line were required it could readily be obtained by study of the methods followed in Argentine where this class of work is efficiently carried out. With the trade established there would be a steady market for cattle and the producer would not be so much at the mercy of the buyers as he is at the present time.

Cattle do not gain weight on a sea voyage. Generally they make up towards the end of the voyage what they have lost during the first day or two provided the weather is favorable. It is usually accepted that landing cattle without loss of weight is satisfactory, when shipping to Britain. This then means no gain for the feed used during the week or more the cattle are at sea. The cost of feed together with accidental losses (which are frequent) and the wages of the cattlemen would be saved. The freight would probably be less for the carcass than for the live animal after the trade was established.

Against this is the statement that the beef of live cattle landed in Great Britain is sold as "Home Killed" and brings a higher price. This is open to objection from an ethical point of view and in any case the average buyer is indifferent to the source so long as he gets good beef. If our beef were sold in Britain as Canadian beef it might become a standard of quality that would be sought after.

By fattening and slaughtering cattle in this country the overseas market would show profit on both beef and the farm produce used in feeding. The difference between the value of a fat carcass and a "Stocker" landed in Britain would show the margin necessary for both profits, if all expenses were considered.

If the same energy had been put into getting terminal abattoirs and storage, that has been put into trying to have the Embargo on cattle raised, the problem of larger markets for our surplus cattle would be nearer solution.

## PERSONALS

Dr. J. A. Cordick, has removed from Alsask, Sask., to Unity, Sask.

Dr. J. C. McConnell, O. V. C. -19, has located at Togo, Sask.

Dr. G. G. McDonald, O. V. C., -21, has located at Assiniboia, Sask.

Dr. J. A. DeCow, O. V. C. 1905, has located at Sceptre, Sask.

Dr. G. G. Collins, O. V. C., 1888, has located at Howell, Sask.

Dr. H. D. Nelson having resigned his connection with the staff of the Ontario Veterinary College is now engaged in practice at Sarnia, Ont.

Dr. George Hilton, of Ottawa, who has been visiting the Western Provinces, returned to Ottawa on October 9th.

Dr. W. J. Hinnan, of Winnipeg, made an extended tour in the Southern States of America. He left Winnipeg on September 28th for Lexington, Kentucky.

Dr. G. A. Ledgerwood has resigned from the Health of Animals Branch, Department of Agriculture, to take up practice.

Dr. A. Kopperud, McKillop V. C., Class -20, has now located at Delisle, Sask.

Dr. A. Paddon, who practised at Grand Meadow, Minn., following his discharge from the A. E. F., has located at Mazenod, Sask.

# CLINICAL and CASE REPORTS

## PARALYSIS OF MUSCLES OF DEGLUTITION FOLLOWING HEATSTROKE

During the heat wave this summer, was called out to see a grey gelding, 18 years old and weighing about 1200 pounds, which had fallen on the street with heat stroke.

**History—**

Had been driven about 16 miles, (usual work for years), when suddenly seemed to weaken, slowed up and eventually fell down and was unable to rise.

**Treatment—**

Usual local treatment and hypodermic of strychnine sulph, grains 1. Horse rose to his feet and was taken quietly home. Called next day and saw the animal under a tree in the shade. According to the owner he was "doing fine." I observed in watching the horse, that he took a mouthful of grass, chewed it and then dropped it out of his mouth. Offered a pail of water and he would plunge in his head but was unable to swallow any. I brought these things to the owner's notice and informed that the horse would have to be fed through a stomach tube.

Endeavoured to pass stomach tube through nostrils in the usual way but was unable to do so as it would return through the other nostril. Eventually passed the tube through the mouth. Fed eggs and wine three times daily for three days by this method.

Blistered the throat with cantharides. Hypodermics of strychnine, one half grain, and 40 ounces of warm saline, intravenously, once daily.

Horse died on the fourth without a struggle. The post mortem revealed that the pharynx was somewhat enlarged, very pale in colour and much softer than normal.

W. Clarkson, B.V.Sc., Riceville, Ontario.

## ENUCLEATION OF CAPPED ELBOW

Bay, thoroughbred mare, aged, with pedunculated tumour at the point of the near elbow. The swelling was of long standing and cold, and very unsightly.

After preparing the case, she was thrown by ordinary casting hobbles. These permitted the front legs to remain extended after the horse was down, and exposed the site of operation to advantage without having to loosen any portion of the harness.

Horse was chloroformed after the Hobday method, using 1½ ounces of chloroform by measure, poured upon a roll of absorbent cotton in an open-end rubber bag, passed over the nostrils. The head was then wrapped in a rug and allowed to inhale a heavily charged vapor for one minute or less until the violent struggling ceased. (This method has the excellent advantage of lessening the dangerous period of excitement to a minimum and in my opinion is absolutely safe and effectual.) The rug was then removed and anaesthesia continued in the ordinary way using a sponge in the open end of the bag to receive the chloroform.

After washing the area with hot water and soap the hair was removed with clippers, dried and painted with tincture of iodine. An incision was made from above downwards through the skin, full length of the tumor. The skin was then separated on each side and the mass held with Vulsellum forceps. Enucleation was then completed in the ordinary way with curved scissors. Care was taken to avoid removing any of the fascia or muscular tissue near the point of the elbow to avoid possibilities of emphysema occurring. On the third day a portion of the lips of the skin was removed with the scissors and wound washed daily with carbolic 1 in 100. In three weeks a nice dry scab had formed. The wound was not packed, except immediately following the operation to arrest a slight hemorrhage, after which it was treated open.

T. C. Evans, D. V. Sc., Toronto, Ontario.

## REMOVAL OF DEAD FETUS

On August the 14th, I was called to see a bay mare, aged about 12 years.

On arrival I found her standing in the stall, listless, thin and without appetite.

**History—**

The owner stated that mare had presented signs of oestrum just a short time before. Following this she voided a large quantity of fluid, and stringy mucous from the vagina, of a particularly evil odor. He had noticed this before, once or twice during the summer, prior to the signs of oestrum. The mare had been used during the spring for work, but of late she had lost in condition and never regained her appetite.

In answer to my inquiry, the owner said she had been bred in May 1920, fifteen months previous. The following history was then related by the farmer,—On October 1st, 1920, there was a heavy thunder-storm and the mare was in the pasture. The following day when he went to fetch her in, he found her lying down. This was somewhat of a surprise because he had never seen this mare lying down before, either in or out of the stable. When he attempted to make her rise, he noticed that she seemed a little stupid and he naturally came to the conclusion that she had been struck by lightning. As she seemed worse next day, he called a veterinarian in to see her.

In the early spring of this year he commenced to work her although she had failed somewhat in flesh. A little later she came in oestrum and continued to do so at regular intervals, but was not bred.

**Diagnosis—**

Examination per rectum, I found the left horn of the uterus very much enlarged and apparently containing fluid. The right horn was only slightly enlarged. I then examined per vagina. The vagina was much inflamed. The os uteri was contracted but after a few minutes was able to insert one finger, after that I dilated it a little more. At this period the mare began to strain.

**Treatment—**

I then passed a small rubber tube through the os and pumped one quart of warm normal saline solution. I then removed the pump and allowed the saline to syphon out through the tube. One large pail-full was removed this way. The tube was then exchanged for a larger one (stomach tube) and in all about 28 or 30 quarts of fluid was removed of a very foul character. Irrigations were continued using normal saline. I was at this time able to pass three fingers through the os and then removed the remains of what appeared to be a four months old foal. After all the bones were removed, the uterus flushed out with more saline and boracic. The following day I returned to see the mare, her temperature and pulse at this time was normal and she was eating quite heartily. I again irrigated the uterus with a mild antiseptic solution and gave a tonic. To date she is out in the the pasture doing well, her appetite is good and she seems in the best of spirits.

E. E. St. G. Pallet, B. V. Sc.
Elmvale P. O. Ontario

## DR. McEACHRAN AN HONORED GUEST

On October 13, 1921, there assembled a gathering of veterinarians in the Vice-Regal Suite of the Ritz Carleton Hotel in Montreal to tender possibly the highest tribute that has ever been paid to a veterinarian. This gathering celebrated the founding of McGill University in Montreal, was a complimentary dinner given to Dr. Duncan McEachran by the graduates of the old Montreal Veterinary College which was later adopted by McGill University as its Faculty of Comparative Medicine and Veterinary Science. The School, established in 1866, was the first to adopt and maintain a three-year course. It was discontinued in 1903 as Dr. McEachran found it impossible to continue its operation at such a great personal sacrifice, no provision having been made by the University for its financial support while the Province of Quebec contributed but a very small sum for its maintenance.

Sixty of the three hundred and twelve graduates, assembled from widely separated points as an expression of their homage to one of the pioneers of veterinary education on the North American Continent. From the most remote points were, Drs. Lamb, of Denver, Darling, of Saint Louis, Fahey, of Waycross, Georgia, Tamblyn of Calgary and Townsend from New Glasgow, Nova Scotia. These with others joined to pay homage to an octogenarian and renew old associations.

The Chairman for the occasion was Dr. Fred Torrance, Veterinary Director General, Canada.

The chief tribute was presented by Professor Alva Moore, Dean of the New York State Veterinary College, who although not a graduate of the school has been associated with Dr. McEachran in many investigations of a scientific character as well as a warm personal friend. This masterly address was ably seconded by Dr. W. Reid Blair, a graduate of McGill, who is engaged as a scientific expert on the maintenance of wild animals in captivity at the Zoological Gardens, New York.

Dr. Moore reviewed the history of the institution over which Dr. McEachran had presided, saying: "Dr. McEachran opened the Montreal Veterinary College in 1866 and directed its activities so long as resources sufficed. A kind Providence has alloted him four score years in which to witness the fulfillment of his early prophesies concerning veterinary education. It is a gracious act at this Centennial of the University for his former students to pay him this tribute in appreciation of his many and valuable services to them and for their cause.

Dr. Blair in tendering his appreciation spoke of Dr. McEachran's ungrudging eagerness to be helpful. He spoke of the economic value of veterinary science and its benefit to mankind, and said that the field of veterinary medicine was not one of commercial exploitation, but one of service.

Dr. McEachran was given a rousing welcome as he rose to reply to the toast. In expressing his pleasure at the invitation to attend the dinner he remarked that the Mac's are all clannish, and it would not have surprised him a bit if in that gathering of the Sons of Old McGill someone had got up and asked them to drink that old but extremely modest toast, "Here's to 'oor 'ain sells—wha's like us?"

The speaker referred to a gathering in Boston on January 19th, 1896, when the Massachusetts Alumni of the Department of Comparative Medicine of McGill University met at the Quincy house, and the reporter of the Boston Globe, the following day referred to them all "As healthy, hearty looking men." In reminiscent mood he recalled that the reporter had referred to the ease and dignity with which he carried his years. "Why I was a young fellow then and I am not an old fellow now," a sally greeted by applause.

Proceeding, Dr. McEachran said:—"Institutions of learning may be built, equipped and endowed by the liberality of benefactors. Graduates should feel that they are a part of the University, that they ought to continue to take an active interest in the affairs and have their views on all important matters expressed by their representatives." He hoped that the day is not far distant when the Faculty of Comparative Medicine will be restored and endowed in a manner proportionate to its importance. Dr. McEachran closed by saying: "Let me conclude by thanking you for this crowning compliment of my life, for which I cannot find language to adequately express my feelings of appreciation."

The next toast of "The Veterinary Profession" was proposed by the Chairman and responded to by Dr. Chas. H. Higgins of the Lederle Antitoxin Laboratories of New York, and Dr. C. D. McGilvray, Principal of the Ontario Veterinary College.

Dr. Higgins took the place of Dr. W. L. Williams, professor of Surgery in Cornell University, who was absent through illness. The theme running through his remarks was that we must all so perfect ourselves in our chosen calling, that we can render that service to humanity for which our training best fits us. This is the idealism instilled by Dr. McEachran throughout the entire college course and it is one which has made it possible for the men from McGill to excell in their respective communities.

Dr. McGilvray paid very high tribute to Dr. McEachran and the work which he had accomplished in Canada.

The toast of "The Graduates" was proposed by Dr. M. C. Baker of Montreal, the oldest professor of the school. Dr. Baker referred to the part which Dr. McEachran had played in his guidance. Dr. Lamb, of Denver, Colorado, replied in his usual scholarly manner. He pointed to the standing of the school and was gratified at the return of so many to do honor to our worthy preceptor and Dean.

Dr. Robinson of Washington, gave many reminiscences of the older days and some of the struggles necessitated by the changes that have taken place in the teaching of Comparative Medicine during the past decade.

A guest, representing the only school of Comparative Medicine in the Province of Quebec, was Dr. Daubigny, Dean of L'Ecole Veterinary of Laval University, gave in his native language a very high tribute to Dr. McEachran. It was late when the gathering dispersed and all were unanimous that the sacrifice was worthy of the opportunity to pay tribute to such an outstanding personality and professional man as Dr. Duncan McEachran. —C. H. H.

## TUBERCULOSIS IN A THREE YEAR OLD SHIRE MARE

### Eric W. Bond, Portland, Ont.

**History—**

The onset of the disease was first noticed on February 12th and was described as follows by the farmer:

The mare whilst at work in the field suddenly stopped and did not respond to the customary urging, she was found to be fast asleep and it took several minutes to waken her,—she then went on with her work and appeared quite normal. This happened again two days later and again the following day, after which she was taken by the sleeping spells at more or less frequent intervals. These strange attacks become still more frequent as time went on and it proved unsafe to use her on the highway. She often went to sleep in the same way whilst in the pasture, sometimes during play and at others whilst pasturing after play, and once when taken to the stallion became similarly comatose durings coitus.

She developed kidney trouble, which was first noticed about the first week in May, the urine being thick and dark coloured. The farmer then brought her to town for inspection and advice from the Veterinarian.

**Findings of Examination—**

The kidney trouble was confirmed and examination per rectum revealed the presence of a tumor-like mass in the great mesentery near its root, the lump being a little larger than a goose egg. The mare was in good condition and had a good appetite.

**Prognosis—**

Unfavourable, as we were suspicious of either actinomycosis or tuberculosis.

**Advice and Treatment—**

That the mare be given light work so long as she did not get any worse, diet of light, laxative and nutritious food, and to pasture as much as possible. Drugs, spirits ether nit, half ounce three times daily as a diuretic

**Course of the Disease—**

The mare continued in pretty good health, general appearance and appetite until June 7th, when she went off her feed a little and fell asleep still more frequently, several times per day. She showed difficulty in deglutition when fed on hay and crushed oats, later she could only take gruel and would accept but little of that and finally refused all food, but would take small quantities of water. Acute anemia was well marked and she became very emaciated and died on July 2nd; the farmer said he noticed the jugular veins standing out very plain shortly before death took place.

**Post Mortem—**

The general appearance was of starvation, and though dead twenty-four hours rigor mortis not marked, the abdomen and thorax contained considerable fairly clear fluid, former about 10 quarts and the latter about 4 quarts. The lungs pale and rather smaller than normal, the pleura of the walls showed 5 or 6 fairly small nodules on each wall. The pericardial sac contained about one pint of fluid. The thoracic lymph glands were all slightly enlarged and slightly caseated, especially the anterior mediastinals which were fused together into one mass of about two lbs. weight and which when cut into gave a very calcareous sound.

In the abdomen we found the stomach and intestines to be devoid of food content, the small intestines were pulled together into a bunch by reason of the lesion in the great mesentery, this lesion weighed about four lbs. and was kept as a specimen. The kidneys were both enlarged, especially the left one which was detached from its place and suspended by its vessels, both kidneys contained a small amount of pus, the liver was yellowish in colour, friable and smaller than normal. The spleen, slightly enlarged, pale in colour, with soft nodules of varying size both on the capsule and in the parenchyma.

**Microspic Exam.—**

Smears were made from the mesenteric lesion, treated with the usual acid-fast staining, and when examined showed tremendous numbers of bacilli corresponding to B. tuberculosis.

**General Remarks—**

The above case occurred during a busy time and the post-mortem was held 17½ miles out of town, which explains the lack of detail, especialy a thorough exam of the brain, meninges, and the cephalic and cervical lymph glands, the purpose of the post-mortem was mainly to determine the specific nature of the disease. The cause of the sleeping spells very probably was due to lesions of the brain or meninges. We later ascertained that the above mare like many other tubercular horses had been raised on cow's milk.

# ASSOCIATION NEWS

## VETERINARY ASSOCIATION OF SASKATCHEWAN

One of the most successful meetings of this Association was held at Regina, August 2-3-4, 1921. The President, Dr. Fawcett, opened the proceedings at 9 a.m., August 2nd, with an address of welcome to the members. The routine business having been disposed of, the election of officers was proceeded with, the following being elected to the Council for two years: Drs. C. Head, Regina; S. J. Gibson, Govan; H. Richards, Indian Head; R. G. Chasmar, Hanley. The following members have one year to serve, being elected in 1920: Dr. M. P. McClellan, Regina; Dr. N. Wright, Saskatoon; J. M. Fawcett, Regina. At a subsequent meeting of the Council, Dr. M. P. McClelland, Regina, was elected President; Dr. N. Wright, Saskatoon, Vice-President; and Dr. R. G. Chasmar, Hanley, Sec.-Treas. and Registrar. Among the matters of interest might be noted the decision to open a subscription fund for the memorial to the late Dr. Andrew Smith. The Saskatchewan Temperance Act, as it affects the Veterinary profession in this Province, was discussed at length, and a Committee appointed to interview the Premier, Hon. W. M. Martin, in this connection. The clause in the Veterinary Act which relates to "castration, spaying and dehorning," which at present does not constitute an offence under the provisions of the Veterinary Association Act, was also discussed at great length, and while some of the members present were of the opinion that the clause in question should be eliminated, it was pointed out by the Secretary that repeated efforts in this connection had not been productive of the desired result, but that at the next session of the Legislature the matter would be again taken up, with at least a reasonable expectation that the travelling castrator would be penalised if found operating within a radius of 15 or 20 miles of a qualified Veterinarian.

Dr. M. Barker, Chief Inspector, Health of Animals Branch, Saskatchewan, presented an address outlining the "accredited herd plan" also the technique employed in the various T. B. tests.

A number of interesting cases were presented at the clinic conducted by Dr. Merillat, Botryomycosis of the chest in a bay gelding, the size of the lesion rendered the condition in-operable, after a discussion of the nature of the infection, surgical anatomy, etc., the animal was discharged with a recommendation that it be destroyed.

Among the surgical cases presented were: Umbilical Hernia, in a three-year-old gelding; Odontoma of the nasal cavity of a seven-year-old mare; Laryngeal Hemiplegia in a Percheron Stallion, and three draft horses; Urethral Calculus (extra-pelvic) in a seven-year-old gelding; Empyema of the facial sinuses in a bay mare. A demonstration of "Caponizing" was appreciated. The meeting concluded with a Banquet, at which function Dr. Fawcett officiated in a very able manner. The guests included, Dr. H. N. Thompson, Virden, Man.; Professor Shaw, University of Saskatchewan; J. G. Robertson, Live Stock Commissioner; Dr. L. A. Merillat, Orrville, Ohio., with some fifty members of the Association. The after-dinner speeches were evidently appreciated by the listeners, and this function at least was generally conceded to be the best ever.

—R. G. Chasmar, Sec.-Treas. and Registrar.

## THE AMERICAN VETERINARY MEDICAL ASSOCIATION

This coming year, the A.V.M.A. is planning an active campaign to increase its membership. At present, this association has four thousand members and is the largest and one of the most efficient veterinary organizations in existence.

The A.V.M.A. is an all American Association and its membership and usefulness is not confined to the United States. While the majority of its members reside in the United States, they are desirous that the Veterinarians of Canada shall enjoy every advantage that the association offers.

The general control of the A.V.M.A. is vested in an Executive Board of seven members, six of these are elected by postal vote by the members residing in the respective districts and one member at large elected by the members in convention. The Chairman of the Executive Board is Dr. Geo. Hilton of Ottawa.

The A.V.M.A. publishes a monthly Journal edited by Dr. J. R. Mohler of Washington. This is probably one of the best veterinary journals published in the English language.

The annual dues are only five dollars and include a subscription to the official monthly Journal of the Association. The A.V.M.A. has a substantial relief fund for the aid of members or their families who may be in need. If any member in Canada knows of such, if they will notify the Secretary or President, prompt assistance will be rendered.

The A.V.M.A. endeavours to assist local, state and provincial associations in any way possible to advance the interests of our profession.

Within the past four years, the influence of the A.V.M.A. has extended to many other countries and it now has members in many parts of the world. Graduates of reputable veterinary colleges are eligible. The Secretary will welcome inquiries regarding the A.V.M.A. and will send application blanks upon request.

N. S. Mayo, Secretary,
4753 Ravenswood Ave.,
Chicago, Ill.

## ONTARIO VETERINARY ASSOCIATION

At the executive meeting on September 2nd, Dr. W. A. Thompson, of Washago, a member of the executive committee, made a generous offer to the Association. He offered free of all costs, excepting drawing of deeds, one lot of land described as follows: Forty-five feet frontage, depth not stated, but great enough to allow building a cottage and approach to same. Water frontage is not guaranteed, but the lot will carry a title in common with other lots so situated that will allow free access to water for boating, bathing, fishing, etc. This lot is located on the Thompson sub-division of lots 35, 36, 37, 38, 39 of Front Range, Township of Rama, North Ontario County, Ontario, known (or will be registered) as "Floral Park Beach." Or, if possible, Dr. Thompson stated that he might be able to give a lot of the same size on Little Black Lake at Torrence (C. N. R.), near Bala, Muskoka. This gift is to be held by the Ontario Veterinary Association for advance in price, to be sold improved or built upon at the will of the executive committe of the association. The funds derived from same are to be used for the benefit of the Association and its members in general. Dr. Thompson said that he had the welfare of the O. V. A. at heart and wanted to see it stand Number One for the North American continent, and thought that perhaps his donation would cause some of the other members to come forward and help build up our reserve to a point where we could do some good. It was moved, seconded, and carried unanimously that this generous gift be accepted, and that the deeds be presented at the next general meeting.

J. S. Glover, Secretary.

## THE VETERINARY ASSOCIATION OF MANITOBA

A special meeting of the members of the Association was held in the Royal Alexandra Hotel, Winnipeg, Tuesday evening, September, 27th, 1921, at 7.30 p.m. for the purpose of discussing the question of a Dominion Wide Registration of Veterinary Surgeons in Canada and the appointment of a delegate to attend a conference of Veterinary Surgeons to be held at Ottawa during the month of November.

The chair was taken by the President, Dr. F. W. Bryant, and the following members were present: Dr. W. J. Hinman, Dr. R. A. McLoughry, Dr. W. A. Shoults, Dr. W. Hilton, Dr. J. A. Stevenson, Dr. J. A. Munn, Dr. H. R. McEwen, Dr. N. V. James, Dr. H. Bradshaw, Dr. A. L. Alton, Dr. G. B. Miller, Dr. G. A. Bowman, Dr. W. A. Hilliard, Dr. J. G. MacDonald, Dr. H. C. Storey, Dr. H. Colebourn, Dr. J. W. Smith, Dr. S. H. Kesten, and the Secretary Treasurer, Dr. J. B. Still.

The Chairman called the meeting to order and explained the purpose for which it had been called.

After some discussion it was moved by Dr. Shoults, seconded by Dr. Hilton that the Association send a delegate to the Conference of Veterinary Surgeons to be held at Ottawa during November, which was carried.

A lengthy discussion then took place with regard to the merits of Dominion Wide Registration and its various phases as it would affect the present members of the various provincial Associations, and it was then moved by Dr. Hinman, seconded by Dr. Bradshaw, that a committee composed of Dr. McLaughry, Dr. Shoults and Dr. Bryant, draft a resolution embodying the sense of the feeling of the meeting for the guidance of the Association's delegate. This motion carried.

Dr. J. A. Munn, of Carman, who was elected as the Association's Representative on the Dominion Advisory Board on Veterinary Education at the last annual meeting was instructed to represent the Association as delegate at the Conference to be held in Ottawa in November.

On the motion of Dr. McEwen, seconded by Dr. Stevenson, the President, Dr. F. W. Bryant, was selected as an alternative delegate in the event of anything arising to prevent Dr. Munn making the trip.

The meeting then adjourned.

J. B. STILL,
Secretary-Treasurer,
Winnipeg, Man.

---

## VETERINARY ASSOCIATION OF ALBERTA

The Annual Meeting of the Veterinary Association of Alberta, was held at the Macdonald Hotel, Edmonton, on October 12th, 1921. The Convention was opened by the Hon. G. Hoadley, Minister of Agriculture, who gave an interesting and welcome address. The meeting was called to order by our President, Dr. McMillan of High River, who extended a hearty welcome to members and visitors. The meeting was opened, and the reading of the minutes proceeded with, followed by a general discussion.

The election of officers followed:—Dr. S. F. Tolmie, Minister of Agriculture, was unanimously elected Honorary President; Dr. A. C. Murphy, Edmonton, President; Dr. A. J. Malmas, Didsbury, Vice-President; Dr. W. B. Price, Carstairs, Secretary and Registrar; Dr. J. C. Hargrave, Chief Veterinary Inspector, Medicine Hat; and Dr. P. R. Talbot, Provincial Veterinarian, were unanimously re-elected as Directors, together with Dr. F. F. Cairns, Edmonton, the new director to replace Dr. W. B. Price, now Secretary and Registrar. Dr. Talbot was also elected as representative for the Association to deal with matters in connection with the University of Alberta. Dr. W. B. Price, was elected to represent the Association at the Convention held in Ottawa, on November 21st and 22nd.

Dr. J. C. Hargrave gave a very interesting address on Tuberculosis and outlined the various carried out by the Department in detecting and eradicating this disease from the herds in the Province. Dr. A. E. Cameron, Pathologist, Lethbridge Research Laboratory, also read an interesting paper on "Tuberculosis" following this subject with some interesting facts concerning his observations of Swamp Fever, both subjects being keenly discussed by the members present. A vote of thanks was proposed by all members to the Hon. G. Hoadley, Minister of Agriculture, Dr. J. C. Hargrave, Dr. A. E. Cameron, Dr. T. W. LeClaire, and all retiring officers.

This brought to a close a very successful meeting.

The Veterinary Association of Alberta is in a very active and flourishing condition, it membership being composed of 132 members, of which twelve are honorary, leaving one hundred and twenty active members. The Executive have been successful in having some very important amendments made in the Veterinary Surgeons Act. Arrangements have also been made whereby the Provincial Examinations are now held at the University of Alberta, the papers are prepared by the Senate in collaboration with the examining board of the Veterinary Association of Alberta.

The fees are as follows:—

| | |
|---|---|
| University of Alberta ................ | $50.00 |
| Registration Veterinary Ass'n of Alberta | $25.00 |
| | $75.00 |

W. B. PRICE, Sec.-Treas. and Registrar.

## NORTHERN VETERINARY MEDICAL ASSOCIATION

The Northern Veterinary Medical Association of Ontario held their annual meeting on September 26th, 1921, at Shelburne, Ontario. There was a large enthusiastic gathering of local veterinarians. A number of subjects of local interest to the rural practitioner were discussed.

The officers for the coming year are:

Dr. G. McClusky, Alliston, President.
Dr. J. McFadzean, Arthur, Vice-President.
Dr. A. Hughes, Grand Valley, Treasurer.
Capt. J. Dunn, Barrie, Secretary.

The Association's next annual meeting will be held on the last Wednesday in July 1922.

J. Dunn, Secretary.

# Heat Prostration

**W. G. Thompson, Keremeos, B. C.**

Heat prostration may be defined as a morbid process characterized by extreme debility, a profound disorder of the vaso motor and heat regulating centres in the brain, and includes those conditions referred to as sun stroke, heat stroke, insolation, and thermic fever.

**ETIOLOGY.** This disease is usually evident during the warmest periods of the summer when the relative humidity of the atmosphere is high, or in other words, when the atmosphere is the least capable of absorbing moisture. It is commonly known that cooling of the body is chiefly caused by evaporation from the skin, so when evaporation is retarded through excessive humidity of the air the surplus body heat, which is normally cast off by radiation, is allowed to accumulate in the tissues resulting in Hyperthermia. This causes an excessive stimulation of the heat centre, and the derangement of the vaso motor and respiratory centres in the brain. There is a relaxation of the peripheral system and altered cardiac action due to partial vacuity of the right heart. Carbon dioxide saturates the system from the lack of resiliency in the walls of peripheral vessels and impaired respiratory action. The products of metabolism which are normally excreted by the skin are also allowed to accumulate in the tissues.

In secondary causes may be included overwork, fatigue, close confinement in stock cars, etc., high feeding and obesity.

It might be opportune to mention here that this condition is an important factor in the transportation of hogs from the farm to the packing house. Hogs appear to be especially prone to heat prostration when closely confined in hot weather, but its occurrence has been largely eliminated during shipment by douching with cold water at frequent intervals, and by the suspension of ice bags from ceiling of the stock car.

**SYMPTOMS:** For a day or two previous to the veterinarian being called, the owner will probably notice that the animal is easily fatigued, pants considerably, sweats less than normally, and possesses a dull appetite, the symptoms evidenced differ greatly according to the severity of the disease. In slight cases the aforementioned symptoms are all that are noticed, and if the animal be immediately removed from harness and allowed a few days rest the course of the disease may be arrested. But if the above symptoms are ignored or not detected by the driver, the condition suddenly reaches a climax with startling results. There may be a rapidly progressive dullness and depression; the gait is uncertain, gradually becoming more aggravated until the animal drops. On the other hand the animal may suddenly stop sweating, pant heavily, falter, prop himself on all four limbs and collapse.

In either case the head is extended; the respirations are rapid and difficult, stertorous breathing; palpitation of the heart, the pulse is weak and accelerated, often reaching 120 beats per minute. There is excessive hyperpyrexia, the ordinary clinical thermometer often being too limited in its range to record the full extent of the temperature. Cessation of sweating; retraction of the angles of the mouth, gaping, eyes fixed, and sometimes possessing an amaurotic stare, pupils dilated. The visible mucosae in the initial stage is darkly congested, later becoming bluish and even cyanotic. Paralysis of sphincter ani and involuntary defecation; loss of reflex excitability in the superficial tissues. In some cases the animal may be greatly excited which may almost amount to a mania. When this occurs the case is complicated.

Recovery is usually noticed from two to five hours after collapse.

Death is due to respiratory failure, although in a severe case it may result from cardiac syncope. It is ushered in very quietly, the animal expiring without a struggle. In those that collapse the death rate is about 75%, while in those that remain on their feet it is almost nil.

**POST MORTEM.** On autopsy the following lesions may be noticed: the blood is thick and dark, the right heart and systemic veins are full, vacuity of the left ventricle, and occasionally congestion of the brain and its meninges.

**TREATMENT.** In mild cases the treatment may be limited to venesection, a physic ball, tonic, and a few days rest. But in the severe form when the animal collapses cold douches, enemas, and ice-packs to the head are the sine qua non in treatment. The object is to lower the temperature and until it is appreciably reduced, the various symptoms will not abate. Cold water should be sprinkled over the body, but more particularly over the head and neck, and ice packs should be kept applied to the cranial region. Cold enemas should be given at frequent intervals until the temperature comes down to within a reasonable range.

As heat prostration is essentially a disease of exhaustion stimulants are indicated, particularly those acting on the heart and respiration. Camphorated oil probably gives the best results. It should be injected at frequent intervals in doses of 25 to 30 CC. Several men with whom I have had the opportunity of discussing the treatment of heat prostration claim very good results from the administration of camphosol, a proprietory preparation. It is an aqueous solution of camphor and is supposed to be more readily absorbed than the ordinary camphorated oil. Ether is also indicated in hypodermic doses of 15 CC, also aromatic spirits of ammonia in 1 oz. doses. Alcohol, digitalin, caffein, and acetanilide are frequently used. The intravenous injection of normal saline has been tried by some practitioners with indifferent results. When the patient has recovered sufficiently, it should be removed to a dry, shady spot and made as comfortable as possible.

During convalescence the usual vegetable and mineral tonics are indicated. Feed and water should be given in small amounts until recovery is complete, as undesirable results have often been produced by allowing the animal too large a feed or drink.

As one attack predisposes to another, sound judgment must be exercised in working the horse during the remainder of the heat season.

## OBITUARY

The death of Capt. F. D. Smith occurred very suddenly at his home in Lethbridge, Alta., on July 11th. The deceased appeared in his usual health on retiring at night, and passed away while sleeping. Death was due to heart-failure. The late Capt. Smith was born in Montreal in 1888, educated in St. John, N. B., then moved to Alberta where he farmed for a few years before entering the Ontario Veterinary College, from which he graduated in 1915. Capt. Smith served with the Imperial Army for three years in France and one year in India. After returning to Canada he located in practice at Lethbridge, Alberta.

There remains to mourn his loss his wife and daughter, also his father, one brother and one sister, who have the sincere sympathy of his many friends.

In the death of Charles Elliott, V.S., which occurred at St. Catharines, Ontario, on Wednesday, November 9th, 1921, there has been removed one of the best known Veterinarians in Canada. Dr. Elliott was 77 years of age, having been born at Sandwich, Ontario, in the year 1844. He graduated from the Ontario Veterinary College in 1870 and located at St. Catharines where he conducted an extensive practice up until a few months before his death. Dr. Elliott always took an active interest in the welfare of the profession and spared neither time nor effort in promoting its interests. For a period of 50 years he attended regularly each year the meetings of the Veterinary Association. He was a former President of the Association and as a mark of especial esteem was made an honorary member. He also acted as Auditor of the Association for many years. He was a member of the Board of Examiners of the Ontario Veterinary College up until it was acquired by the Government in 1908. The funeral took place on November 11th at St. Catharines and was largely attended. Drs. J. A. Campbell and C. D. McGilvray attended the funeral as representatives of the Ontario Veterinary Association and of the Ontario Veterinary College.

Dr. Sprague, recently appointed to the Meat Inspection Division, Department of Agriculture, has been transferred to Field Work at Winnipeg.

# Veterinary Conference Held In Ottawa

The Veterinary Conference was attended by representatives from every Province in Canada and each Provincial Association In Canada. The Conference was instituted by the Minister of Agriculture, the Hon. Dr. S. F. Tolmie. Invitations were extended to the following gentlemen who were selected by their respective Associations to represent them.:—Dr. J. A. Allen, Charlottetown, P. E. I.; Dr. M. C. Baker, Montreal, Quebec; Dr. M. Barker, Regina, Sask.; Dr. R. Barnes, Ottawa, Ont.; Dr. K. Chester, New Westminster, B. C.; Dr. E. H. Cook, St. Stephens, N. B.; Dr. J. A. Campbell, Toronto, Ontario; Dr. A. Dauth, Montreal, Quebec; Dr. J. Demers, Montreal, Quebec; Dr. S. T. Daubigny, Principal, Montreal Veterinary College; Lieut.-Col. T. C. Evans, Toronto, Ont.; Dr. J. W. Faucett, Regina, Sask.; Dr. George Hilton, Ottawa, Ont.; Dr. J. C. Hargrave, Medicine Hat, Alta.; Dr. O. Hall, Ottawa, Ont.; Dr. M. J. Kellam, Calgary, Alta.; Dr. H. S. Lowrey, Ottawa, Ont.; Dr. W. H. Marriott, Ottawa, Ont.; Dr. A. E. Moore, Montreal, Quebec; Dr. W. Moynihan, Toronto, Ont.; Dr. J. A. Munn, Carmen, Man.; Dr. C. D. McGilvray, Principal, Ontario Veterinary College; Dr. D. H. McKenzie, Vancouver, B.C.; Dr. M. P. McLellan, Regina, Sask.; Dr. W. B. Price, Carstairs, Alta.; Dr. J. W. Pugsley, Woodstock, N.B. ; Dr. W. B. Rowe, Chatham, Ont.; Dr. J. G. Rutherford, C.M.G., Board of Railway Commissioners, Ottawa, Ont.; Dr. A. Savage, Winnipeg, Man.; Dr. J. B. Still, Winnipeg, Man.; Dr. W. W. Stork, Toronto, Ont.; Dr. F. Torrance, Veterinary Director General; Dr. G. Townsend, New Glasgow, N.S.; Dr. D. Warnock, Deputy Minister of Agriculture, Victoria, B. C.; Col. C.H.L. Sharman, C. M. G.

The conference opened at 10 o'clock in the office of the Veterinary Director General on Monday, November 21st. The Minister was unable to be present owing to business which took him away from Ottawa, but the delegates received a very cordial welcome from Dr. J. H. Grisdale, Deputy Minister of Agriculture. Dr. F. Torrance was chairman and presided at all meetings. Dr. Grisdale in his address stated that the Minister hoped that the matters to be discussed would receive the deepest measure of thought, and that the members would arrive at a judicious understanding, as the subjects were of great importance to the country. The topics which Dr. Tolmie had in mind were summarized on the sheet programme, and were matters which would have to deal with the future of veterinary surgeons. He promised that the Department would do everything as far as possible to carry out the policies recommended by the Conference, but with the present economic depression, could not promise to spend large sums of money. Dr. J. G. Rutherford, C.M.G., spoke of the present status of the profession, he thought that no veterinarian had a more varigated experience than he had. At the same time he felt very much at home with members of the profession with whom he had been so intimately associated for such a long time. He desired to assist in the consolidation and unity of the profession in Canada. Speaking of advancement, Dr. Rutherford said that there are many active and energetic men in the profession to-day, and he thought that the high academic position of the Veterinary Colleges in Canada, and the work in connection with the **Canadian Veterinary Record** were to be regarded as signs of progressiveness. He wished the conference every success and hoped that the representatives would leave Ottawa with the feeling that they could carry back to their respective associations the message that something had been accomplished.

The first subject to be discussed was the second question on the program: **"Testing of accredited herds by practitioners when the time comes for the handing over of all fully accredited herds to the control of selected practi-**

**tioners.. .This will involve how the practitioner should be selected, whether by examination, by special school of instruction on testing, or in any other way."**

Dr. F. Torrance, Chairman, in introducing the subject, outlined the work which had been done in establishing accredited herds in Canada. It is now time to hand over some fully accredited herds to selected practitioners for future testing, and both Federal and Provincial authorities will have to co-operate. As the test involves the intradermal and ophthalmic methods, it is necessary that the veterinarian employed for this work is well trained and understands the application of the tests.

Dr. C. D. McGilvray, thought that it was a very important question for the practitioner, and that selection should be made with a view of getting the right men who will understand the test. In the past tuberculin testing of cattle has, in some instances, fallen into disrepute because of improper methods of testing, Dr. McGilvray was of the opinion that before practitioners be allowed to do this work they should receive special instruction and practical demonstrations.

Dr. D. Warnock, Vancouver, spoke of the work being done in British Columbia. Last year, Dr. Warnock stated, over 7,000 cattle were tested by Provincial veterinarians with the result that over 700 tubercular cattle were weeded out. Anti-tuberculosis societies are very active in B. C., and public sentiment is on their side. He thought that the time was overdue when the Federal Government of Canada should undertake the testing of cows from the Atlantic to the Pacific.

Dr. J. A. Campbell thought that the practitioner should conduct the testing of cattle, but he should receive his fees from the Government.

Dr. Baker, Montreal, was of the opinino that instructional work should be given to the general practitioner before he should have an accredited herd handed over. In addition the Department will have to satisfy themselves that the practitioners are men of integrity, as that is just as important as qualifications.

Dr. J. C. Hargrave, Medicine Hat, made one of the most thoughtful suggestions of the morning when he advocated that the selection of the practitioners for the work should receive the careful consideration of the Particular Association.

Dr. W. B. Price, Alberta, made a strong plea for the private veterinarian. He thought that the discussion of integrity should apply both ways. The practitioner is being deprived of a large source of revenue by Government Inspectors making tests for tuberculosis. He was in favour of selection by examination. Dr. Pugsley of New Brunswick was of a similar opinion to Dr. Price. Dr. Cook, New Brunswick, spoke of the advisability of instructional work. Regarding who should pay, Dr. Cook thought the Government should foot the bill.

Dr. J. A. Munn, Manitoba, also favored the practitioner doing the testing, and to assist him in arriving at uniform conclusions some form of instructional work should be given as technique is of great importance.

Drs. Savage, McKenzie, Townsend and Allen spoke in a similar strain. The consensus of opinion of the conference was that the practitioners who will be selected to conduct the testing of accredited herds, shall either directly or indirectly be paid by the owners of the herds. The following resolution was presented to the meeting by the committee, moved and seconded. **"Whereas it is the opinion of the members of this Conference that after the herds of the country have become fully accredited, that the further Therefore be it resolved, that as far as possible, all further testing for expense of keeping them accredited shall be chargeable to owner thereof. accredited herds should be conducted by veterinarians endorsed by the Department, and that the veterinarian should only be endorsed by the**

**Department after having received a special course of instruction, and found in examination to be qualified, and that the scale of fees be fixed by the Department."**—Carried.

The afternoon session commenced at two-thirty, the Laval Members having arrived during the morning. The Chairman introduced the subject. **(1) "Dominion registration of veterinary surgeons similar to the Dominion registration of medical men."** Dr. Torrance spoke of the interpretation of the Medical Act and how it applied itself in the case of medical men who had been in practice for many years. Copies of the Act were distributed to the delegates and the Chairman asked that the different sections be discussed separately, with a view of applying them in petitioning Parliament for a Canadian Veterinary Act. In discussion it appeared that the Provincial Associations were for the greater part in favour of Dominion Registration, providing that any legislation enacted in favour of same, did not infringe upon or over-ride the present legislation and by-laws enjoyed by each Provincial Association. The delegate from Alberta was of the opinion that the present system of registration enacted by his Province was sufficient. Dr. Dauth, of Quebec, spoke along similar lines and referring to the Association which he represented said that the Province enjoyed every privilege and the Association of Quebec were quite happy to carry on as they were, at the same time they would be willing to co-operate with a Dominion Association providing that it would not interfere with their own privileges. At this point Dr. Torrance emphasized the merits of a Dominion Registration, and drew attention to the fact that in the Canadian Medical Act, we have a "blazed trail" if we wish to consider it. It was then moved and seconded that a Committee be formed of the representatives of each Association, and to be included in such were the Principals of both Veterinary Colleges. This carried, and the committee met at once to consider the Medical Act with a view of determining whether it could be made applicable to the formation of a Dominion Veterinary Act. During the time this Committee was in session, the Chairman, in view of the short time left, introduced the fourth question on the programme, **"Government control of Hog Cholera."** The Chairman explained that it was the opinion of the Department that garbage fed swine will never be entirely ridden of the dangers of hog cholera, as considerable carelessness exists among garbage feeders not properly cooking the swill. He went on to say that in regard to infectivity of pork, it has been found that a small piece of pork from infected hog meat, two inches square, is capable of producing an infection, even though it be cured and smoked.

Dr. Rowe of Chatham spoke of the difficulties attending the complete sterilization of garbage. In some cases he said outbreaks had occured in which it was extrmely difficult to attribute to carelessness on part of garbage feeder.

Dr. Barker spoke of the excellent results following the use of hog cholera serum. He was of the opinion that the present policy adopted by the department could not be improved. The following resolution was passed **"Government control of hog cholera. That in the opinion of the meeting, the policy of the Health of Animals Branch, Department of Agriculture, is sound and satisfactory and should be continued."**

The next item on the programme was **"Government control of tuberculin and similar products."** In discussion it was pointed out that a great deal of inferior biological products are being offered for sale on the Canadian market. That Canada does not demand any standard of potency for tuberculin similar to the requirements of the United States Bureau of Animal Industry. Dr. Torrance said that at present it was impossible to saddle any extra work upon the staff of the Biological Laboratory who were greatly handicapped, due to lack of accomodation. If the Government introduce any measures for the control of biological products, it would mean that those already on the market would have to be examined to determine their potency. Such work would necessitate a greatly increased staff and larger laboratories. The present laboratories at the Experimental Farm, Ottawa, were built about 20 years ago at Dr. Rutherford's request for the purpose of conducting investigations into bovine tuberculosis under the direction of Dr. C.H. Higgins. Since that day not a single brick has been added, the laboratories have not been enlarged. Dr. Rutherford thought that the U. S. Bureau of Animal Industry, might be asked to regulate the exportation of biological products into Canada that have not qualified for a permit for sale. Dr. O. Hall spoke of the ease by which the laity are able to obtain tuberculin, and how it has come to his knowledge, that certain indviduals have tested cattle prior to the arrival of the Government Inspectors. The following resolution was submitted and passed by the meeting:—

**"That in the opinion of this meeting, the Department of Agriculture should control the manufacture, sale, use and importation of tuberculin and veterinary biological preparations and proprietory veterinary remedies in order to prevent the importation, sale and use of inert or dangerous products."**

The hour was then after six and it was moved, seconded and carried that the meeting should adjourn until the following day.

Tuesday at nine-thirty, the special Committee on Dominion Registration were ready to report. Dr. C. D. McGilvray, Chairman of the Committee discussed the Medical Act by paragraph and section. Matters went smoothly until reaching para. 2, sec. 18, this section dealing with examinations leading up to registration appeared to some of the members from the maritime provinces as being impossible to accept. Dominion Registration would be acceptable if it gave them the privilege of practising in any prosince in the Dominion.

Dr. McGilvray considered that in drafting the Canadian Medical Act, the profession were concerned chiefly for the furture. That owing to different standards of qualification in the past, it would be very difficult to apply an Act that would suit all.

Dr. Baker hoped that consideration would be extended to the student of the future, as the graduate of the past has been given a great deal more than he expected.

It was moved and seconded that a Committee should wait upon influential Members of Parliament for the presentation of the resolution from the meeting. The names of the Committee were selected from those who by virtue of their geographical position would be available for being called upon at short notice. The names are Drs. F. Torrance, C. D. McGilvray, Daubigny, Baker and Campbell.

The following resolution was then passed,—**"Whereas it is the concensus of opinion of this Conference that is advisable to seek Dominion Registration for veterinary surgeons, similar to that now enjoyed by medical profession. Therefore be it resolved that the Parliament of Canada be asked to pass the Bill approved by this conference."**

The next subject was,—**"How to increase the attendance at our veterinary colleges. Of recent years the attendance at veterinary colleges has fallen below the limit, which will supply the profession and the Department with the men necessary to carry on veterinary work in Canada."**

The Chairman spoke of the present small attendance at the veterinary colleges this year, compared with the fact that both faculties, medicine and dentistry are very large beyond all expectations. The question is, said Dr. Torrance, "how can we attract young men to enter the profession?" Drs. Daubigny and McGilvray spoke to the standard of entrance being raised so that many young men believe that there is better remuneration in other lines of science. Dr. Kenneth Chester gave an address dealing with the future of the profession, and what the young graduate has offered him when he leaves college to start up for himself.

Dr. Grisdale thought that the young graduate should make a specialty of cattle diseases as there is a big move to breed only the better class of cattle in the event of which there will be a demand for the veterinarian who is a cattle specialist. The reason for the few students in veterinary colleges to-day, said Dr. Grisdale, is lack of attraction offered by the profession from a monetary standpoint. For that reason the young man prefers medicine, because the entrance requirements are the same and there is little difference in the length of the course. Dr. Grisdale was in agreement with the move of Ontario College to Guelph, as he was of the opinion that it would offer better facilities for research into cattle diseases, many of which, Dr. Grisdale said, "the profession know little about."

Dr. Daubigny stated that the undergraduates at Montreal spent three months at the Oka Agricultural College, where special instruction was given in cattle diseases.

Dr. Allan dissented in some respects to the views expressed by the other speakers in reference to the move of the Ontario Veterinary College to Guelph. This speaker said that we should view veterinary science from all its different aspects: The field has been widened to contain many branches. He maintained that veterinary hygiene can be best taught in the city, and the Association of the University was very necessary for the training of the veterinary specialist. That the Department of Agriculture absorbs 70 per cent of the graduates from colleges.

Passing to the sixth subject, **"Co-operation between the veterinary and medical professions. Suggestions as to how team work between the two professions can be achieved, in view of the many diseases and parasites of animals which are transferrable to man."**

Dr. Chester in opening the discussion told how the Vancouver Medical Society had, as a result of certain publicity given the criticism of Provincial Health pamphlet entitled "Meat," invited the B. C. Veterinary Association to a joint meeting, at which Dr. Dammon, President of the Veterinary Association of B. C. gave an address on "Food Inspection." He suggested that it is most advantageous to the health of the general public that a closer association between the two professions should exist to secure the best results. Dr. Baker advocated joint meetings in order to obtain accuracy of details in certain subjects. Dr. Torrance thought that joint meetings were judicious to which live stock men might be invited with good results. Dr. Barnes, Chief of the Food Division, gave a very interesting address on the value of co-operation. "Whose fault is it that greater co-operation does not exist?" was the question submitted by this speaker. He continued his remarks to the point that veterinarians have a particular liking for hiding their light under a bushel, and refraining from giving the public or the medical profession the benefit of their special knowledge and training. The trouble with the veterinary profession is that too many of us suffer from inertia.

Dr. C. D. McGilvray spoke of the excellent service being rendered the city of Toronto by the city's Veterinary Department, and although they live within the shadow of the M. O. H., they are a great factor in safeguarding the health of the people.

The final subject offered for discussion was the Canadian Veterinary Record. The question was "Shall it be maintained as the official journal of the Canadian Veterinary profession?" The chairman called upon the editor, Lieut.-Col. T. C. Evans, for a report on the progress of the Record during the past twelve months. Figures were then read showing that nearly 2,000 copies were printed at each issue, and were posted to every veterinarian in Canada whose address is unknown. Added to those the Record has a good list of subscribers in the United States and other foreign

(Continued on page 57.)

# COLLEGE NOTES

## AWARD OF PRIZES AT THE ONTARIO VETERINARY COLLEGE

The annual prize giving day at the Ontario Veterinary College was held on Tuesday, October 25th, 1921. The Hon. Manning Doherty, Ontario Minister of Agriculture, addressed the students and aftewards presented the prizes.

Dr. C. D. McGilvray, the Principal, was in the Chair and introduced the Minister. A large number of the Faculty were present on the platform. Dr. McGilvray made a few brief remarks and drew attention to the fact that Mr. Doherty, although he was to speak at another meeting that afternoon, had taken time to visit the College for the presentation of prizes.

Mr. Doherty prefaced his address by stating that he always had the keenest interest in the work of the Ontario Veterinary College. He said it was his desire that the College should be second to none on the Continent and its graduates second to none in the Empire. At the same time he thought that the students should make the best possible use of the facilities at their disposal, so that when they graduate they can go out into the world properly equipped to intelligently face the problems which will confront them later on.

Speaking of present conditions, he said that Canada was going through a period of deflation and the agriculturalist has been struck about the worst of any. However he was confident that the present depression would not last, recovery was bound to come. He thought that it was necessary for us to pay our debts and to accomplish that we must increase our live stock holdings. Mr. Doherty read the latest statistics dealing with value of live stock in Ontario. It was shown that the total value of all classes of farm stock amounted to $326,737,337. Mr. Doherty stated that those figures amount to nothing unless the veterinarian is in the community as a protection against loss from disease.

To the students about to graduate it was pointed out that they should realize the importance of the profession. That it was a real profession, offering great opportunities for the young, properly trained, veterinarian. He said that the Ontario Veterinary College stood as one of the pioneer colleges of veterinary instruction in America, with a record to be proud of.

Speaking of the transfer of the college from Toronto to Guelph, Mr. Doherty said that all considered, the move would be of great advantage to veterinarians. He realized that the properly trained veterinarian should be familiar with live stock in all branches, and Guelph would afford better opportunities than Toronto of not only producing efficiency in veterinary science but would enable the graduates to become qualified as judges of all kinds of live stock. With this extra knowledge the veterinarian will become a real force in his locality.

In his closing remarks the Minister impressed the students to regard their profession as an honored one, and at all times to zealously guard their conduct with sacred care, as the veterinary profession ranks as high as any other professon on earth. He said that he felt very proud of the Canadian Veterinary Profession during the time he was addressing the Live Stock Breeders in England when he was quoting records concerning the health of Canadian live stock which could be claimed as the best in the world.

Dr. McGilvray, in course of his remarks, referred to the achievements of the profession within recent years, and expressed the hope that the graduates of the future would be able to render even better service. Many of the problems relating to diseases of animals were being solved from time to time, and, with more efficient measures at hand their further control and eradiction would be simplified.

The standard of qualification for the profession had also advanced, and it was becoming more fully realized that the veterinary profession is composed of a body of educated and scientifically trained men, and not merely handicraftsmen. Unfortunately the idea has prevailed among some, and in certain quarters, that veterinary science was a single subject, easily propounded and readily acquired instead of an academic education requiring the study and application of many classical subjects common to science as a whole, and closely allied to that of Medical Science and Agricultural Science. It is apparent to most observers that veterinary science and usefulness is undergoing a transition and in many respects the results may be more beneficial than otherwise. Admittng that the increased use of motor vehicles and tractors had lessened the use and demand for horses, particularly in the cities, there nevertheless remained the fact that the horse still had, and would continue to have, a large sphere of useful and needful service to mankind which could not be dispensed with. Other classes of live stock will continue to be essential in the production of meats and other food products to meet the needs. The encouragement and fostering of live stock development will naturally increase from time to time. In fact, the preservation and fostering of live stock interests may become of greater national concern as they contribute an important factor in the economic conditions of all countries and of a kind which cannot be lightly sacrificed.

Some skilled service must, and will always be required and provided to reasonably safeguard the herds and flocks of the country against disease which are preventable and communicable, or of such a nature as may endanger and effect large numbers. The opportunity for rendering this service to the live stock industry is open to the veterinary profession. To fully cope with the various exigencies, the profession must extend a high standard of efficiency in all its branches of public service and usefulness and the benefits will be proportional.

In conclusion the hope was expressed that the students of to-day would avail themselves of the many advantages offered by the College so that on graduating they may more adequately perform the services that the community expects of them.

Addresses were also delivered by Drs. H. H. Ross, F. W. Schofield, R. Gwatkin, R. A. McIntosh and H. E. Batt.

Prizes and awards won by the students during the previous session were then presented by the Hon. Mr. Doherty to the following successful candidates.

## GRADUATING CLASS

**General Proficiency:**

| | |
|---|---|
| First Prize | L. M. Heath |
| Second Prize | T. G. Sprague |
| Third Prize | F. C. Schmidt |

## THIRD YEAR CLASS

**General Proficiency:**

| | |
|---|---|
| First Prize | G. R. Penhall |
| Second Prize | A. W. Munson |
| Third Prize | E. W. Bond |
| Honorable Mention | W. G. Thomson |

**Canine Diseases:**—Awarded by Dr. J. A. Campbell.

| | |
|---|---|
| Special | A. W. Munson |

### SECOND YEAR CLASS

**General Proficiency:**

| | |
|---|---|
| First Prize | A. L. McNabb |
| Second prize | H. A. Pugh |
| Third Prize | R. McDonald |
| Honorable Mention | E. Roe, H. M. LeGard, R. G. Cuthbert, D. J. Lawson, A. R. Campbell, P. L. Rouse. |

**Anatomy:**

| | |
|---|---|
| Special Prize | R. Macdonald |

**Histology:** Awarded by Dr. H. E. Batt.

| | |
|---|---|
| Special prize | A. L. McNabb |

### FIRST YEAR CLASS

**General Proficiency:**

| | |
|---|---|
| First prize | H. P. Westerburg |
| Second prize | J. G. Anderson |
| Third prize | A. E. C. Goodman |
| Honourable mention | R. L. Hanley, C. E. Hagyard, J. Gray, E. Hancock, H. McDonald, E. M. Jones, P. E. Home-Hay, L. D. Perry, G. R. Booth. |

**Anatomy:**

| | |
|---|---|
| Special prize | H. P. Westerburg. |

**Histology:** Awarded by H. E. Batt.

| | |
|---|---|
| Special prize | H. P. Westerburg |

SERVICE WITH A SMILE
"Yet I was a senior prizeman once"
"And pride of a college eight"

Courtesy of "Goblin"

---

In the March Record we offered prizes for the best article contributed by an undergraduate of the Ontario Veterinary College, relating the experience during the past summer's vacation. Owing to either modesty or pressure of work, entries were very few in number. However, two or three M. S. were submitted and were all excellently prepared. The Editor submitted them to a disinterested Veterinarian of considerable academic ability, and the prize awarded according to his judgment. We have therefore sent a cheque for five dollars to Mr. Eric W. Bond, whose essay appears elsewhere in this issue. The well prepared papers of the other two competitors appear also in this number.

# CORRESPONDENCE

Editor, Canadian Veterinary Record.
Sir,—

Will you be good enough to give me an opinion regarding the preparation of the foot before receiving the shoe. I refer to one condition which is sometimes a cause for controversy among Veterinary Surgeons and over which there exists a certain difference of opinion.

Is it reasonable to pare or rasp the heels so as to permit the frog to come into opposition with the ground after the shoe is attached and the horse is standing with all four feet squarely on the ground?

My personal contention is that the paring down of the heels is often seriously overdone in riding horses, and is a common error among farriers that are doing so called "scientific shoeing" of hunting horses. In order to allow "frog pressure" I have seen the angle of the heels rasped down so that the shoe when in position rests upon the bars. It is maintained that if the heels are left long, the frog is out of commission high and dry and contracts.

The point I would ask you to consider is, if it is advisable to effect a hard and fast rule regarding and cutting away of heels? The toe must be left unnaturally long, that is obvious with the result that horses shod for "frog pressure," in some instances develop a gait similar to that of a horse with chronic laminitis. I strongly recommend bar shoeing when it is desired to allow unhampered frog-pressure.

—Veterinary Surgeon.

**Reply to above query, by Dr. K. Chester.**

Editor, Canadian Veterinary Record,

Sir,—Preparing the hoof for shoeing is a very important subject and one which is often not sufficiently studied. In preparing the hoof for the shoe, the plane of the bearing surface of the hoof in its effect on the foot-axis, (that is an imaginary line drawn from the fetlock through the long axis of the os suffraginis, os coronae, and os pedis) is the most important point to consider.

If from undue paring of either the heels or the toe, this foot-axis, which should be a straight line parallel with the wall of the foot at the toe, is broken either forward or backward, undue strain is placed on the exterior or flexor tendons, as the case may be, also on the ligaments, and may produce lameness, more particularly in the saddle horse on account of the weight of the rider.

If the frog is shrivelled up, other means should be adopted to assist its growth, such as a bar shoe, as you suggest, with of course no nails near the heels, so as to allow expansion of the foot at the heels and the descent of the frog to the ground, and also if still too much shrunken, the addition of the leather sole with tar and oakum packing, will tend to soften the frog and give the needed pressure to it and the sole, and so stimulate their growth.

—Kenneth Chester.

The idea that two can live as cheaply as one was probably started by a tape worm.—Nelson News.

# REVIEWS

## The Diseases of the Genital Organs of Domestic Animals.

By W. L. Williams, Professor of Obstetrics and Research Professor in the Diseases of Breeding Cattle in the New York State Veterinary College, Cornell University. 856+XVIII. pages, 8 coloured plates and over 240 illustrations in the text. W. L. Williams, Ithaca, N. Y. $10.00.

In the last issue of the Canadian Veterinary Record a review of the above mentioned publication was promised.

The possibility of obtaining a book of this kind written by one who is an authority of international repute on the subject carries with it a sense of relief to the veterinary profession. It is indeed a timely publication for the subject matter of the book is built upon questions which are of vital importance to the veterinarian and live stock men of the day.

The work is divided into three parts. Part I. has for its heading, diseases and defects not attributable to infection and embodies chapters of the anatomy and physiology of the genitalia, the clinical examination of the genitalia, artificial interferences with reproductive processes, arrests and aberrations in genital development, miscellaneous defects and diseases interfering with fertility, systemic diseases and derangements interfering with reproduction, coital injuries and parturient injuries. Part II. deals with tumors of the genitalia. Part III has 560 pages of reading matter on the subject of infections of the genital organs, under which is included specific venereal diseases, non-venereal infections, and general infections, affecting the genital tracts of domesticated animals, the manner in which these infections affect the genital organs of both the male and female, together with the pathological changes resulting therefrom is dealt with. Considerable data is also given in reference to the bacteriology of those organisms known in the infections. In addition, chapters on the congenital infections of calves and foals appear under this heading.

The value of the text is greatly increased by the presence of 243 illustrations, and 8 colored plates.

In his prefatory remarks the author gives due credit to those who collaborated with him in the preparation of the bacteriologic and histologic findings, and clinical data relative to the subject.

The book is nicely bound, the paper good, the illustrations clearly defined, and the arrangement of the subject matter logical.

To anyone acquainted with this branch of veterinary science probably the most pleasing feature of the publication in reviewing it is the number of coincidences that will be noted, with the author's observances on the subject.

The work is highly commendable and while some of the subjects dealt with are still problematical, at the same time it does not contain any objectionable features. By the older graduates and practitioners its welcome is assured. To the student it will be valuable as a text.

Dr. Williams has dealt with the subject in a very comprehensive manner and in the publication of this book has rendered the veterinary profession a service distinctive in character, and of no uncertain value.

—R. A. M.

### Food Inspection and National Health by Lieut. Col. Gerald Leighton, O.B.E., M.D., F.R.S.E., Medical Officer of Foods. Scottish Board of Health. In the October 1921 "National Health."

The writer in his article draws attention to the fact that most people have a good idea of the measures taken in connection with such matters as epidemics, vaccination, etc. "Probably most of the educated citizens know at least the general provisions and methods under which the milk trade is carried on. It is doubtful, however, if there is the same degree of general knowledge concerning the work that is done by these same departments to secure protection of the public in the matter of ordinary food stuffs."

Relating to home killed meat, the writer accurately states that "more care is taken to supervise imported meat supplies than home supplies." He says that there is no such thing at the moment as a uniform system of meat inspection in Great Britain, and that in England there are over 20,000 slaughter-houses most of them privately owned. If meat inspection was properly carried out it would require an army of inspectors.

Conditions are evidently better in Scotland, we are told to-day in Scotland there are only 542 private slaughter-houses left. The establishment of a uniform standard and system of meat inspection has been pressed upon the Scottish Board of Health for many years by the local authorities and not less, by the trade itself. Dr. Leighton points out that the truth concerning the variation in the standard of inspection in certain districts because of the varying judgments of different inspectors being manifestly unfair. The meat trade would take advantage by this and send certain qualities of carcasses to certain places where they might be more leniently dealt with.

A uniform standard and system of meat inspection to be administered by the public health officials has been recommended to the Board by a committee of experts. This report is now being published by H. M. Stationary Office. Price 4s. net.

T. C. E.

### Value of Chicken Pox Vaccine, in the Journal of the A.V.M.A. October 1921. By Fredk. Boetner Junr. and E. L. Stubbs.

This article gives a list of experiments carried out by the Pennsylvania Bureau of Animal Industry, first as the result of numerous enquiries from poultrymen regarding the value of chicken pox vaccine or bacterins, and, second the failure of the authors to find anything in literature which might be considered as conclusive proof that such products were valuable. The vaccine was prepared according to the methods outlined by Hadley and Beach. Comb scabs and pseudo-membranes from mouth and throat and cheesy collections from around eyes were removed, minced and triturated with normal salt solution. The mass was allowed to macerate in ice box over night, then filtered through cotton, diluted with more salt solution and heated for one hour to 58° Centigrade.

Tables show that the experiments were conducted on a large scale. Affected farms were visited and birds given both single and double inoculations of the vaccine. The work was done under ordinary field conditions and in the hands of these investigators the vaccine produced and recommended by Beach has not proved of any practical value in controlling chicken pox.

T. C. E.

### Immunization against contagious abortion...Investigations conducted by the Imperial Bureau of Health, Berlin, by S. C. J. Bennett, in Veterinary Record, February 12th, 1921....Swick, Zeller, Krage and Gminder. Arbeiten aus dem Reichgesundheitsamte, 1920, Vol. 52, No. 3.

The object of the researches were to investigate thoroughly all conceivable methods of immunization and to find the method which will be of most practical use.

Eighty infected herds with a total of 3,006 cows were treated, and the following immunising agents employed.

1. Living organism used only for non pregnant cows some of which had aborted and some of which had not.
2. Dead organisms used for already pregnant cows and for some not pregnant.
3. Living organisms plus anti-serum. Used for pregnant cows to obtain active immunity without causing abortion.
4. Dead organisms plus anti-serum. Also for pregnant cows.
5. Attenuated culture. Living organisms heated at 50.C. for 2 1-2. hours. Used in the case of yearlings and calves.
6. Immune serum. Used for infected cows in an advanced stage of pregnancy to try and prevent abortion.
7. Plain broth used as a control.

In all cases the injections were made subcutaneously and of the 3,006 per cent. were only given plain broth. Half of the cows in each herd were not treated.

Details of each herd individually show widely varying results. Of the 3,006 cows under consideration 758 aborted before treatment, and 442 after.

Of all the methods, treatment with the living organisms gave the best results. Among the cows given living organisms alone, there was subsequent abortion in only 5.8 per cent., and of those given living organisms and serum only 5.26 per cent. aborted. Of those given dead culture alone or with serum 12 per cent. aborted. Of those given serum alone 53 per cent. aborted. This high percentage following serum treatment is to be considered alongside the fact that all 17 cows so treated were in an advanced stage of pregnancy and probably also of infection.

### Conclusions

1. Dead organisms. In both pregnant and non-pregnant cows the degree of immunity produced is of low degree and short duration.
2. Dead organisms plus serum. Similar conclusions to those of dead organisms alone.
3. Living organisms. Better results in all circumstances than with dead organisms. Of 218 cows so treated which had previously aborted, only six aborted afterwards.
4. Living organisms plus serum. In the case of non-pregnant cows the results were as for living organisms alone. Proved useful for the prevention of abortion in pregnant cows; in fact this method caused as great a reduction in abortion among pregnant cows as did living organisms alone among the non-pregnant ones.
5. Controls (plain broth). Among the animals not inoculated there was an INCREASE in the number of abortions from 175 to 245.

It was demonstrated that inoculations are attended with extreme safety, practically no untoward results were observed. An important precaution however is to take care that non-pregnant cows inoculated with living organisms do not go to the bull for two months at least.

## Vaccination Against Strangles

**Rene Van Saceghem. Annales Med. Vet., Vol. 66, 1921, page 100.**

Van Saceghem referring to a malignant form of strangles prevalent among the horses at Army Remount Depots at the Belgian Army Horse Depots, describes the good results resulting from the use of a vaccine made from cultures of the streptococcus of strangles.

The streptococcus employed is from cultures obtained from pus in typical cases, grown in bouillon and killed by heating to 56 degrees C., for half an hour.

The application consists of three subcutaneous injections, the first being 5 c.c. and the other two 10 c.c. each at intervals of eight days.

This vaccine not only produces immunity but exerts a curative action to horses already affected, and can be safely given to horses suffering from strangles in which the symptoms are very grave.

—T. C. E.

### The Atloid Lymphatic Glands.

**Report by Robert Barnes, Chief of Meat Inspection Division, Health of Animals Branch of Agriculture, in Monthly Bulletin for October, 1921.**

Dr. W. R. B. Knowles, of Calgary, Alta., has contributed some very important observations regarding affections of the Sub-Atloid Lymphatic Glands. This gland has been found on numerous occasions to show lesions of tubercular and actinomycotic infection when all other body glands appeared normal. Dr. Knowles' work is of particular significance and should be a very great aid to Veterinary Surgeons making autopsies on slaughtered reacting cattle.

—T. C. E.

## VETERINARY CONFERENCE HELD IN OTTAWA

(Continued from page 49.)

countries. The editor produced a list to show that the Record is sent to all the veterinary colleges, many of the agricultural colleges and a number of libraries in the United States of America. During the past year barely sufficient paid subscriptions were received to meet cost of production, stationary and postage. It was thought that as this was a representative gathering of the entire Canadian Veterinary profession, it would be a very opportune time to ask for an expression of opinion as to what support might be expected from the different Associations, which would encourage further efforts in this connection. Another point to be considered was the fact that the College at Toronto, which has provided office space, heat and light free of any charge moves to Guelph in the spring. These are items which must be settled before commencing the 1922 Volume.

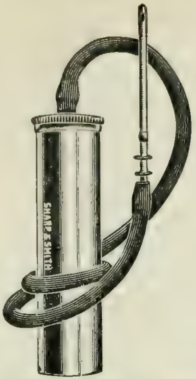
Expressions of opinion were tendered by Drs. Chester, Still, Price, Munn, Townsend, Cooke and Baker, representatives of the Canadian Veterinary Associations, to the effect that the publication of the Record should be continued as it was of great service to the profession.

The Conference closed at 7.00 p.m. on Tuesday, November 22nd, but before disbanding the meeting expressed its grateful thanks to the Minister of Agriculture for his kindness in making the Conference possible. The following vote of thanks was placed on record with the other resolutions submitted,—**"That this meeting desires to express its appreciation of the action of the Minister of Agriculture in arranging this meeting, and to express its regret that the Minister was unavoidably absent."**

Army Veterinary Service in War.

By Major General, Sir John Moore, K.C.M.G., C.B., F.R.C.V.S., R.A.V.C., late Director of Veterinary Services in India and Director of Veterinary Services, B.E.F., 190 VI, pages and 17 full page illustrations. H. & W. Brown, 20 Fulham Road, London, England.

This book received just as we were going to press, and will be reviewed for the next issue of the C. V. R.



**Ether Vaporizing Outfit for the Treatment of Mastitis in Cattle, as devised and used by A. T. Peters, D. V. M., Peoria, Illinois.**

The treatment consists of etherizing the udder, which technique is almost the same as that used in treatment of milk fever, only that the ether is not injected into the quarters (but that it is allowed to be vaporized into the quarters). This is accomplished by inserting a milk tube into the quarter affected, to which a rubber tubing has been attached and to the other end of this tubing a metal cylinder, then immersing into boiling water, which will cause an almost instant vaporization. This allows the ether vapor to penetrate through the entire quarter affected. To prevent the escape of the ether vapor tie tape around the entrance of the quarter.

Dr. Peters has had very satisfactory results from this method due to the fact that ether has a powerful germicidal effect and that the vapors of ether penetrate into every crevice of the udder, thereby destroying the growth and multiplication of the germs. For complete details covering this treatment refer to "The Vitamineral News," Volume I, Number 2, dated August, 1921.

Outfit consists of a heavy brass nickel plated cylinder, two-ounce capacity, to which is attached six feet of tubing of proper size and attached thereto a self-retaining milk tube.

Price of Outfit, complete .............................................. $2.00

ESTABLISHED 1844 **SHARP & SMITH** INCORPORATED 1904

Manufacturers and Exporters of

High Grade Veterinary Instruments, Supplies and Books.

65 E. LAKE STREET - CHICAGO, ILL.

**VETERINARIANS**

**Insertions under this head will be made at the rate of $1.00 per fifty words or under for each insertion.**

**Practice for Sale**—In a growing Manitoba town, fifty miles west of Winnipeg, on the main line of C. N. R., and in a good Agricultural district. This includes new house, car and quantity of drugs. Apply S. E. Lawrence, V.S., Kawende P.O., Manitoba.

THIS SPACE IS RESERVED FOR VETERINARIANS WHO DESIRE TO ADVERTISE. PRACTICES, INSTRUMENTS OR DRUGS FOR SALE. ALSO POSITIONS OPEN TO ASSISTANTS.

W. J. R. FOWLER
V. S., B. V. Sc.
464 Bathurst Street
TORONTO

OFFICE College 6782
RESIDENCE Junction 1505

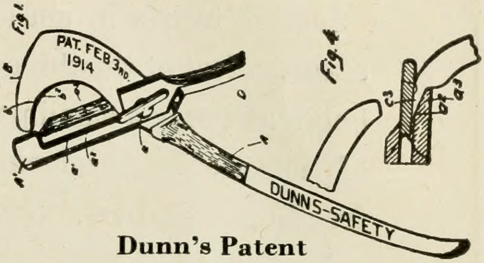
**SURGERY**

Cryptorchid and Roaring Operations, Etc., Performed.

**"The Repository"**
**Coulter Bros., Props.**
10-28 Nelson St., TORONTO

Auction Sales of Horses, Harness, etc., every Tuesday and Friday. Private sales every day. Correspondence and Consignments Solicited.

**SPECULUM**
**Special cash price**
**$13.50**
HAUSSMANN & DUNN CO.
**708 SOUTH CLARK ST., CHICAGO, ILL.**
**See our Williams Sterility Set**



**Dunn's Patent**
Best Emasculator, Extra Large,
**SPECIAL PRICE $11.75**
**REGULAR SIZE**
**SPECIAL PRICE $10.25**

**W. E. Saunders & CO.**
**LIMITED**
**LONDON, ONTARIO**

Specialists in Veterinary Supplies, including all lines

Drugs, Fluids
Tablets, Bacterins
Serums and
Reputed
Specialties.

(*Write for our Price List and Free Samples*)

J. A. CAMPBELL
V. S., B. V. Sc.
17 Elm St., Toronto, Ont.
Phone Main 52

Canine and Feline diseases a speciality. Out of town practitioners should avail themselves of our hospital service and facilities for treatment. Small animals will be promptly delivered if sent by Express. No distance too great.

Printers Guild Limited

Fine Book and Job Printing

Estimates Cheerfully Furnished

**8 University Ave.**
**Toronto**

**Phone**
**Adel. 3930**

# *"THE HORSE"*

**until a few years ago could not be dispensed with in the general daily life in the rural as well as these large urban centres.**

Success in life in one's profession is an individual affair. Most of the things we do are done merely from habit, and only a small part of our actions is the result of reflection. Producing and Earning is the major fraction in Success. Saving is the minor fraction.

How long since you checked up your spare time and considered how valuable and useful it would be to you in dining at the WALKER HOUSE, "The House of Plenty," or the HOTEL CARLS-RITE, "The House of Comfort."

The two Hotels have held an unique place in the history of our Province. The parents of many of our students attending the great universities in this City have made the Walker House and the Hotel Carls-Rite their home when visiting Toronto.

We pay particular attention to Ladies and Kiddies, and would thank you for your patronage at Sunday Noon or Sunday Evening Dinner, where splendid value is given for the money received.

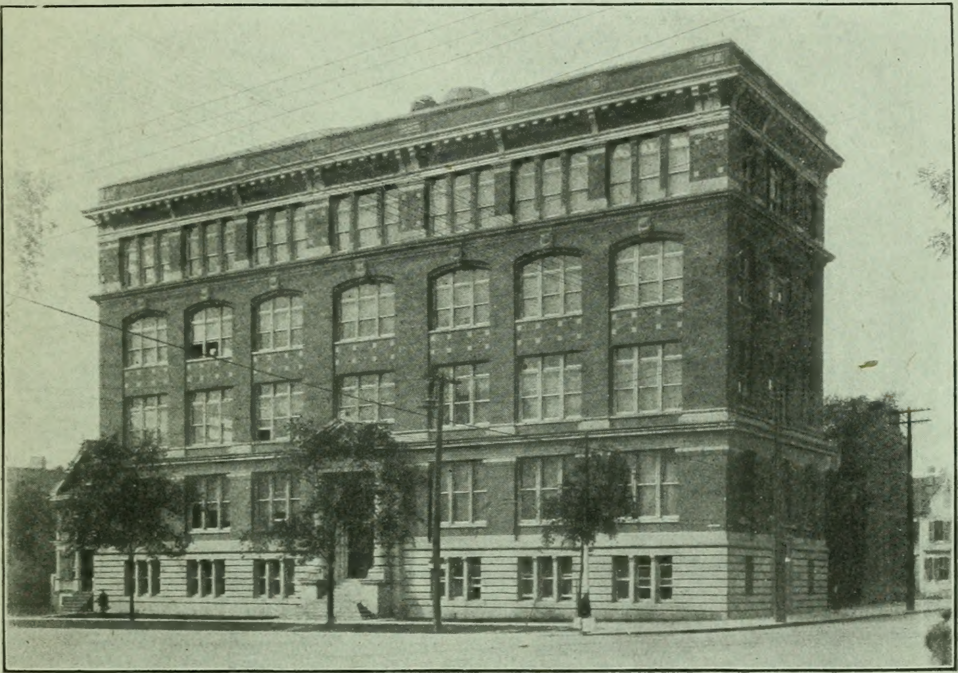
GEO. WRIGHT & E. M. CARROLL

**PROPRIETORS**

# ONTARIO VETERINARY COLLEGE

110 UNIVERSITY AVENUE
TORONTO, CANADA

**Under the Department of Agriculture of Ontario**
**and affiliated with the University of Toronto**



The new building, which is entirely modern and replete with the best equipment and facilities for Scientific instruction.

It offers a complete course of instruction and training in Veterinary Science, leading to the degree of Bachelor of Veterinary Science (B.V.Sc.). Calendar containing full information as to entrance, tuition fees, and course of study, mailed on application.

**C. D. McGILVRAY V. S., M. D. V.,** ***Principal***

# Blackleg Aggressin

Lederle

WE announce the addition to our list of Veterinary products Blackleg Aggressin, a germ free filtrate prepared from the affected tissues of calves artificially infected with blackleg.

Its value in protecting susceptible animals against blackleg is unquestioned; its use is widespread, and its preparation in our Laboratories is under the direction of eminent veterinarians, which ensures the highest type product.

Blackleg Aggressin is supplied in packages containing 10, 20 and 50 doses.

***Full Particulars on Request***

LEDERLE ANTITOXIN LABORATORIES
511 FIFTH AVENUE
Corner of Forty-third Street
NEW YORK CITY